MASTERING A METROPOLIS

R. L. DUFFUS

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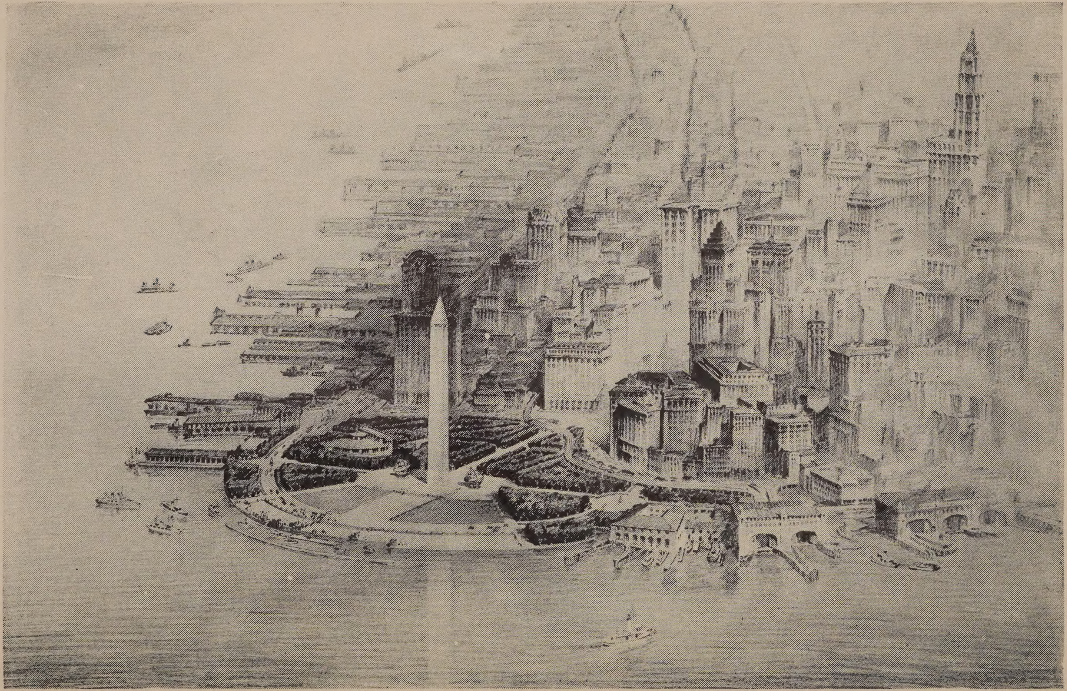

Regional Plan of New York *Eric Gugler, Architect*

A Conception of Battery Park as the Foreground of New York and America

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MASTERING A METROPOLIS

Planning the Future of the New York Region

By

R. L. DUFFUS

HARPER & BROTHERS PUBLISHERS
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MASTERING A METROPOLIS

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THE SIGNIFICANCE OF THE REGIONAL PLAN

BY ELIHU ROOT[1]

"THIS project is to get an intelligent idea of how the growth of this city in the future may be directed, with common and general judgment about the way in which it is desirable that it should grow, so that it will meet as fully as possible the difficulties that are inseparable from mass human life. I think the project is practicable. I think that the existence of plans known to everybody will give just enough direction to the movement of the multitude of separate impulses to lead the growth along the right lines.

"A city is a growth. It is not the result of political decree or control. You may draw all the lines you please between counties and states, a city is a growth responding to forces not at all political, quite disregarding political lines. It is a growth like that of a crystal responding to forces inherent in the atoms that make it up.

"The difference between a very large collection of human beings in a small territory and a small collection of them, between a big city and a small town, is not so much a difference in degree as it is a difference in kind. When you pass from your small town to your big town, you get problems, difficulties, injurious conditions, entirely different in kind from those that exist in the small town, and they ought to be dealt with intelligently.

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[1] In a brief address made at the meeting which inaugurated the Regional Plan of New York seven years ago (May 10, 1922), Elihu Root touched upon practically every one of the major questions discussed in this volume, and his observations are still so pertinent that it seems appropriate to quote some of them here.

"This city exists because it has a great country behind it. It doesn't exist for itself. It lives because it discharges a distinct function for all the people of America. Today it isn't discharging that function creditably. This project when carried out, I think, will enable it to render the service that is expected from it, and in return for which incalculable wealth is poured into it, and to deserve the dignity and the honor befitting the great Republic for which it is the metropolis.

"If this project is supported and developed and made widely known, if it strikes the imagination of the people and receives the support of the public authorities and of public opinion, we may believe that our children and our children's children will see a great metropolitan region in which there may be homes where children can see the sun and breathe the air and grow up in strength and beauty; and a city where men find life worth living among nobly planned and adequately spaced and harmoniously related streets and open spaces and architectural monuments."

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FOREWORD

PLANS for the future development of Metropolitan New York, however wisely conceived, will only be significant in civic development if they are both understood and enthusiastically endorsed by all the citizens and civic organizations whose support is necessary to their execution. The work of the Committee on the Regional Plan of New York and Its Environs, covering a period of seven years and resulting in the publication of ten detailed and technical volumes of findings and recommendations, is, therefore, in peculiar need of translation into a simple and readable story which conveys the broad outline of the proposals resulting from this exhaustive study.

As chairman of the committee, it is appropriate for me to say for myself and my colleagues that the committee has been at considerable pains to associate with itself an author who would prepare a volume dealing with the outstanding results of its findings in such a way as to give them a wide public audience.

We believe that Mr. Duffus has been conspicuously successful in dealing with the great mass of technical information and in selecting for presentation in this book the general picture of the findings and proposals of the committee in such a way that its recommendations will be widely understood and discussed. The book shows that he has read the long story and has grasped the salient and interesting points; that he has been able to study a difficult and complicated problem and still preserve his enthusiasm for its essentials.

The aim in this presentation is thus to submit for public evaluation and discussion the high points of our research and to offer our findings in the hope that critical appraisal and eventual endorsement may ensue. When the public is once convinced that this is the right way to proceed, that it does not mean spending vast sums of money unnecessarily, that it really means the spending of money wisely, and in the end avoiding the waste of mistakes, the Plan of the New York Region can be said to have been launched. We believe that the book which Mr. Duffus has written is a practical step in accomplishing this important purpose.

FREDERIC A. DELANO

[Note—The volumes comprising the full report of the Committee are listed on the last page of this book.]

AUTHOR'S NOTE

Although this volume carries a single name on its title page as a handy means of indicating where the blame for its shortcomings may justly be placed, it is in reality a coöperative product. I have drawn exclusively on the material gathered by the Committee on Regional Plan of New York and Its Environs, have profited by the suggestions and criticisms of the members and staff of the Committee, and count my work successful to the extent that it reflects in its small way the spirit with which they began and carried through their huge and difficult task. I am especially indebted to Mr. Thomas Adams, general director of plans and surveys, who has been most patient and helpful in dealing with an amateur in a field where even experts may well fear to tread. I may add that whenever a phrase or passage in the more lengthy volumes published by the Committee seemed better adapted to the purposes of this book than any I could substitute, I have lifted it, without apology or quotation marks.

R. L. Duffus.

MASTERING A METROPOLIS

Let our young people adopt in their hearts a city plan and the citizens of tomorrow will carry it out.—Charles D. Norton.

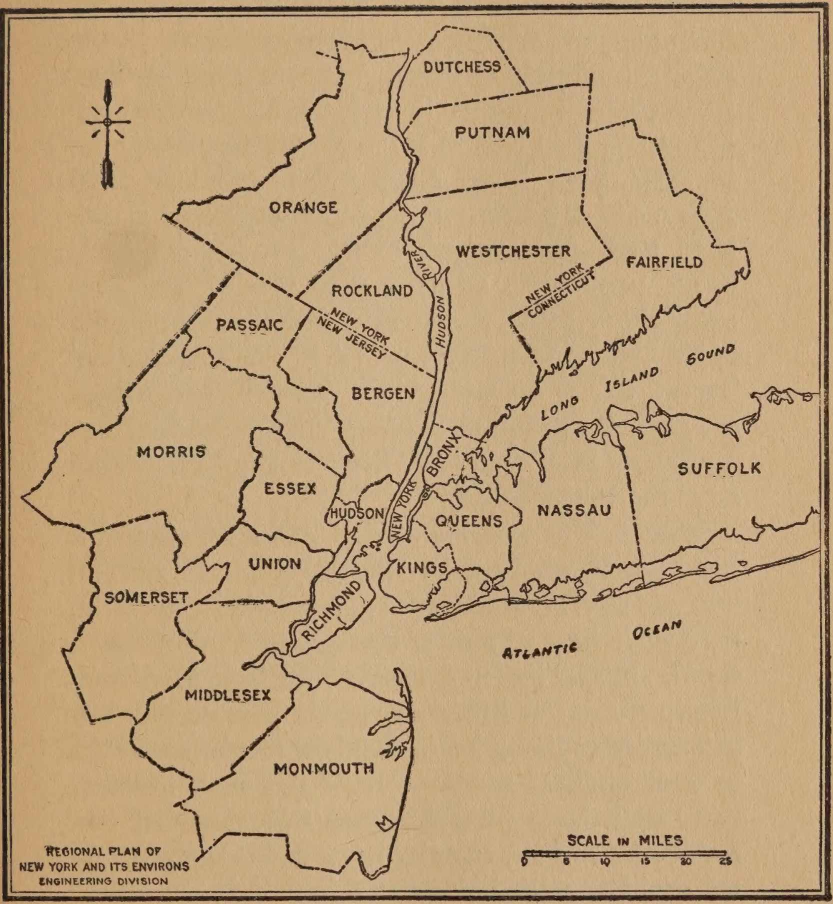
Chapter One

HOW WE GOT HERE

IF WE know why a community has become what it is we can make a guess as to what it is likely to become in the future. There is no doubt that the New York Region of today is different from that of 1790, of 1850, of 1900, even of 1910. The Region of tomorrow will be different from that of today. The changes will affect the life of every resident. What are they likely to be? How can we get ready for them?

Let us begin by looking at the Region as it is; then let us trace its lines of growth and, if we can, its reasons for growing. Then let us inquire into the work it does, its ways of doing that work, and the problems which come up as a result. Finally, let us try to look ahead. To do this in the simplest way will require the whole of this small volume. We will want to study not only the things that will probably happen if natural tendencies are left to take their courses, but also the things that we wish would happen and the steps we can take to make them happen. For instance, one natural tendency seems to be toward more crowding in subways, streets, and public places. What can we do to get rid of this inconvenience and still keep all the conveniences and attractions of city life? We can think of our community as we think of an apartment which we are planning to build, decorate, or remodel. Where are we going to put the piano? How are we to keep the different members of the family from stepping on one another's toes? A city is simply a larger and more complicated apartment and its inhabitants a more numerous family.

It will be convenient to use the word "city" because it is short, but our interest will not stop with the legal boundaries of the City of New York. Because the influence of the city spills over those boundary lines we shall expand the term to include what is called the New York Region—that is, all that territory in which people's ways of living and working are directly affected by the presence of the metropolis. The late Charles D. Norton, father of the New York Regional Plan, suggested that this area be indicated by a circle drawn from the City Hall which would include "the Atlantic Highlands and Princeton; the lovely Jersey hills back of Morristown and Tuxedo; the incomparable Hudson as far as Newburgh; the Westchester lakes and ridges, to Bridgeport and beyond, and all of Long Island." This is a good working definition, though, as we shall see, it includes some land which is almost as virginal as it was on the day Columbus discovered America, and some that has actually lost population during the last one or two generations.


DUTCHESS
PUTNAM
ORANGE
WESTCHESTER
FAIRFIELD
ROCKLAND
NEW YORK
CONNECTICUT
PASSAIC
NEW YORK
NEW JERSEY
HUDSON RIVER
BERGEN
LONG ISLAND SOUND
MORRIS
ESSEX
BRONX
SUFFOLK
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REGIONAL PLAN OF
NEW YORK AND ITS ENVIRONS
ENGINEERING DIVISION

THE NEW YORK REGION

These 22 counties in three states include over 400 separate municipalities

Our "city," viewed in this way, contains 5,528 square miles. It is as large as the State of Connecticut, four and a half times as large as Rhode Island, and two hundred and fifty times as large as Manhattan Island—which started all the trouble! A little more than half of it—2,887 square miles—lies in New York State, 2,228 square miles in New Jersey, and 413 square miles in Connecticut. It contains over 420 municipalities. Its population is about 10,000,000, or more than that of any state except New York. About one person in every twelve in the United States lives within it. As Paul said of Tarsus, this is no mean city. More human beings are gathered within commuting distance of the New York City Hall than have lived in any similar area since the world began.

Why is this vast population gathered around a little island whose most valuable piece of real estate was sold three centuries ago for $24? We shall try a little later to answer this question in economic terms. People live in the New York Region, as they live in Kansas or Louisiana, partly because they are able to earn a living here. It might also be answered in psychological terms. People live here because, quite apart from what they earn and what they pay for food and rent, the city has a pull for them. If we could explain just what this pull is we would throw light on some of the most puzzling aspects of modern civilization. The majority of us today seem to like to live in crowds. The majority of our ancestors didn't. It would be interesting to know why. But whether or not we can explain the forces that act upon so many of us, we can see them at work. The congestion from which we suffer could easily be remedied if so many of us did not insist upon going to the same places at the same time. But we do insist. We cause congestion not only by going to and from work but by going to and from our amusements and recreations. We probably derive a net profit from living in New York—a profit measured in intellectual and spiritual satisfactions as well as in dollars and cents—or we should not be here.

A good deal of this profit may lie in feeling ourselves at the center of the world's most stirring activities. Here the life of our time burns most fiercely. For the young and the ambitious there is endless opportunity. The stir along a great street, the lift of great buildings against the sky, stimulate the most sluggish imagination. The very noise and confusion may come to be as homelike as the singing of frogs in a country meadow, and perhaps no harder on the nerves. It is often said that New York has no civic patriotism which can be compared with that which an Athenian, a Roman of the Empire, or a Florentine of the Renaissance experienced for his native city. Yet there can be few New Yorkers who have not felt a thrill at the thought that they are a part of a mighty metropolis. At times the city makes the individual small and insignificant. But at times it dignifies him.

We may take it for granted, at any rate, that the way to improve New York is not to abolish it—even supposing that we are able to abolish it. A paragraph or two back we were speaking of the necessity for planning, a subject to which we shall return many times. As we look about us we see on every hand evidences of the lack of planning. Buildings are erected without regard to their effect upon street traffic or upon the ability of the subways to carry their tenants back and forth. Industries which belong outside are maintained within the crowded areas. The population as well as the industries is unevenly spread out. If it were evenly distributed each family of four or five persons in the Region could have an acre of ground. This would be difficult and probably not even desirable, but the fact shows that some of our troubles come from our failure to make sensible use of what we have. It is a little as though we had crowded our family and furniture into two or three rooms of a six-room apartment, leaving the others vacant.

The reason for this situation is not hard to find. The United States is an individualistic country and New York is an individualistic city. Its growth has been brought about by a multitude of individuals and interests, often doing great things, but not often working together as a community. This has been particularly the case as the real New York has outgrown its old suit of clothes and spread into two other states as well as into other counties of its own state.

Let us stand back far enough to get a perspective and observe the way in which this development has taken place and some of the causes for it.

Chapter Two

HOW WE GREW

NEW YORK began, as everyone knows, at the lower tip of the Island of Manhattan. If we think over the greatest cities of the world, past and present, we can see that most of them owed at least their beginnings to the fact that they were situated on bodies of water over which trade had to pass. A protected harbor, giving access both to the sea and to rivers leading inland, was sure in any civilized country to have its city. It took railroads to produce important cities away from the water and even now such cities are scarce. The first settlers on Manhattan wanted to buy furs from the Indians. The Hudson suited their purpose very well, for it opened up the interior as no trails on land could have done. Later on some of the most important railway lines followed this and other river valleys. Even now, as a glance at the map shows, the largest clusters of population in the Region are within jumping distance of the water. Of course the significance of waterways has changed a good deal since the city was started. At that time one could often move more rapidly and with greater security by water than by land.

Now the situation is reversed. The Hudson River, the East River, the arms of the Bay and Long Island Sound, are obstacles which compel us to build ferries, bridges, and tunnels. Naturally, these stretches of water have influenced the direction in which the city has grown, and incidentally have been responsible for some of the overcrowding which has existed so long in certain districts. Manhattan's population had to spread north, during many decades, for the simple reason that it could not spread in any other direction. The building of the bridges across the East River enabled it to spread east, just as tubes, tunnels, and before long a great bridge will assist it to spread west. But even with these aids New York could not grow as Chicago has done, by sprawling out until the outward thrust from the center had spent its force.

The city and the neighboring groups of population which have now become practically a part of it were hemmed in not only by water-barriers, but by the ridges between the watersheds. A topographical map shows this very plainly. Most of the ridges run north and south, which is all very well when one wishes to travel in that direction, but decidedly annoying when one wishes to go directly east or west. The ridge of the Hackensack Valley, the Palisades, and the crests of southern Westchester and Fairfield counties have obstructed the building of highways and railroads. Since much of the traffic coming into New York does follow an east-and-west line, this has been a disadvantage. At the same time, the hills and the beaches, rivers and lakes, have added greatly to the charm and interest of the New York Region. The Bronx River is a good illustration of a small stream which has been made to give pleasure and recreation to thousands of people. Perhaps we should not list it as one of the early factors in making New York grow, yet now, with its natural advantages skillfully utilized, it is drawing population. The pleasant scenery of Westchester, Putnam, and Rockland counties, and of many sections of Long Island and northern New Jersey, has had its influence in making New Yorkers willing to move into the suburbs. Before it became "scenery" it was farming country and played its part in feeding the growing city. That was before New York began to import apples from Oregon, grapes from Argentina, and mutton from New Zealand. But it is interesting to note that some of the best residential territory of the present day, as in Westchester County, was never very good for farming.

Even though we are sure we know all about our city and its surroundings, it may be worth while to cast an eye over the outstanding geographical features of the Region—that solid basis upon which the metropolis stands. Manhattan Island itself is thirteen miles long and between one and two miles wide. South of One Hundred and Tenth Street it is relatively flat, though there is hilly ground in Central Park and there are bluffs above the East

River in the latitude of Forty-second Street. An excellent way to trace the smaller ups and downs is to follow lower Broadway or Fifth Avenue after dark and observe the graceful curves made by the rows of street lights. Broadway dips at Canal Street, where once there really was a canal upon which the boys and girls of Manhattan used to skate. At Murray Hill there is quite a little mountain, for that portion of the island. As readers of Mrs. Wharton's *Age of Innocence* will remember, children of long ago used to slide down it.

But it is at the northern end of Central Park that our Manhattan mountains really begin. Here are real cliffs where young mountaineers exercise their skill. At One Hundred and Twenty-fifth Street is the deep depression which in Revolutionary times used to be called The Hollow Way, and at Two Hundredth Street there is another. What we call Washington Heights lies between these two valleys. Underneath these dimples and wrinkles of Manhattan is a solid rock framework of what the geologists call gneiss and schist, with a little limestone in the north and northeast. Sometimes, as we can see with the naked eye, the rock comes boldly to the surface. At the lower end of the island it is covered with the sand and gravel of some prehistoric glacier, in places to a depth of more than a hundred feet. But it is there, and likely to be there a long time. It is a good foundation to build a city on.

Long Island is not quite so solid, for most of it was brought down by glaciers, and glaciers, relatively speaking, travel light. But it has the great advantage, for many purposes, of being comparatively flat, especially along its southern shores. The ridges in its center and along the northern shore are the piled-up débris known as glacial moraines. A moraine is what a glacier leaves when it has gone as far as it can and begins to recede. The Bronx and Westchester County have also been heavily glaciated, but they have a hard rocky framework, and as everyone who has tried to do gardening or farming in that part of the Region knows, they have also a great many loose boulders. But this does not very much injure their value as residence territory. New Jersey, south of the Raritan River, has low hills, running from one hundred to three hundred feet in height, with a good deal of sand and gravel, many watercourses, big and little, and some swamp lands. Staten Island, geologically speaking, belongs to this part of New Jersey. North of Staten Island, between Newark Bay and the Upper Bay, begins the Bayonne Peninsula. The backbone of this peninsula, swinging in toward the Hudson River, gives rise to the Palisades—perhaps New York's most original and striking scenic feature.

West of the Palisades lie the so-called Hackensack Meadows, a vast undeveloped area, only five feet above the mean tide level, of which we shall have something to say later on. It is well to pay some attention to them, for they may play a large part in the development of the future New York Region. We may leave them, however, and follow up the Passaic and its tributaries to the rim of barrier hills. As we go north through the country on the west bank of the Hudson we come to higher elevations—the Watchungs, the Ramapos, and the Hudson Highlands. As we do so we get out of the immediate influence of the city. But these natural features had much to do with the way trade and traffic came into New York from the beginning, they have affected its growth, and they make a framework to which the future development of the Region must be fitted.

Having cast this hasty glance at the physical qualities of our metropolitan Region, let us consider for a moment its climate. With few exceptions—probably we shall have to mention Los Angeles as one of them—great cities have not owed their greatness to their perfect weather. London and Paris, to take the two mother cities which rank next to New York in size and far overshadow it in historical associations, endure a good deal of weather which no one denies is wretched. When Kipling tried to picture an exile's longing for home he made him hear again the churning of the cab wheels in London mud. New York is luckier, for mud is certainly not the first thing one thinks of in connection with it. Mr. W. F. Wilson of the United States Weather Bureau speaks of the Region as possessing "relatively mild winters for the latitude, not excessively warm summers, an abundance of precipitation well distributed throughout the year, and a rather high humidity." The rains of summer are heavier and the cold of winter less severe than in districts north and west of the city. The actual rainfall for the Region varies between 42 and 51 inches annually. In New York City the average over a period of ninety-five years was 42.16 inches. The minimum is about 30 inches and the maximum is about 60 inches. There are, on an average, 126 days each year on which the careful citizen will carry an umbrella. There is sunshine during 60 per cent of the daytime hours.

The coldest month in the year is February, with a mean temperature of 31 degrees, and the hottest is July, with a mean temperature of 74 degrees. There are normally only 25 days in the year on which the temperature does not rise above freezing, and only six on which it goes above 90 degrees. There is a good deal of fog, which hampers the movements of vessels and even of automobiles and railway trains, and high winds are common. But on the whole the climate of New York is probably better suited to a great urban population than that of most of the world's cities. It is stimulating, yet does not compel us to waste too much energy in fighting it. This is fortunate, for, though we can overcome topographical obstacles, there is apparently not much that we can do about the weather.

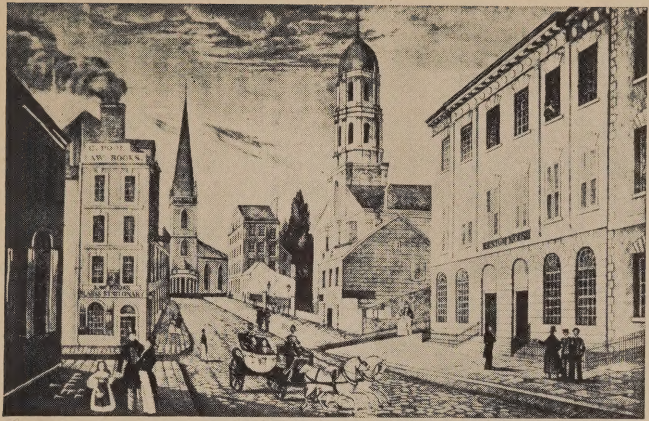
We have now taken an aviator's view of the raw material of New York as it existed when the white man first landed. The Dutch planted their fort and houses at the tip of Manhattan because that point was accessible from the sea, was easily defended, and lay at the meeting of two rivers. Two of these factors eventually made New York first the greatest city on the continent and then the greatest in the world, but it was a long time before this destiny could be foreseen. The Manhattan settlement lagged behind Boston and Philadelphia, though it was established six years earlier than the former city and more than half a century earlier than the latter. In 1760, according to estimates made by the federal Census Bureau, Philadelphia led with 18,756 inhabitants, Boston was second with 15,631 and New York had to be content with a miserable 14,000. There were very good reasons for this. Boston lay nearer to the fishing banks, which furnished so important a share of Colonial trade. The tobacco of the southern Colonies alone exceeded in annual value New England's export of cod and other sea food. Pennsylvania had grown more rapidly than New York and New Jersey because it had kept peace with the Indians and because its eastern valleys were fertile and accessible. The Iroquois barred the New York merchants from the north long after the traders of Philadelphia were freely exchanging goods with Pittsburgh. Then, just as New York began to draw ahead of her rivals, the Revolutionary War dealt her a terrible blow. For seven years she was in the hands of the British. Twice large sections of the city were burned. Commerce practically stopped. When the American colors were run up, on November 25, 1783, only 10,000 remained of the population of 20,000 which had existed before the war.

But during the next few years the spirit of New York as we know it today began to assert itself. By 1787 the population was back at its pre-war level. Three years later it stood at 33,131. The New Yorkers felt so cocky at their new prosperity that they came near not ratifying the federal Constitution. The Napoleonic wars were a godsend to New York merchants. They not only shipped abroad their own products, but they brought in cargoes from the French West Indies, "nationalized" them to give them the protection of the American flag, and sent them abroad, too. They had an advantage because they were nearer the open sea than their Philadelphia competitors and nearer the West Indies than were the ship-owners of Boston. By 1800 New York was the leading American seaport—a position which it has never since relinquished. Meanwhile the State of New York had been gaining rapidly in population. It had been fifth in 1790; in 1810 it was second; and not long after it was first. Transportation was developing. There was much building of turnpikes after the Revolutionary War. The first steamboat line between New York City and Albany was put into operation in 1807.

The War of 1812 was a temporary setback, but it was followed by a period of renewed activity. Transatlantic communication grew in speed and importance. The famous Black Ball packet line to Liverpool was established in 1816, and the Red Star, the Swallow Tail, the Dramatic, and others followed. The era of canal building came on. The Erie was finished in 1825. It came at a time of great expansion, and its effects were probably greater than those of any other public improvement in the United States since that time. It opened the West to trade and settlement in a manner hard for us in this day of railways, automobiles, and airplanes to realize. Not only in western New York but in northern Ohio, Indiana, and Illinois did the canal make its influence felt. Large populations grew up in these regions, and instead of trading down the Mississippi to New Orleans, as their neighbors further south had done, began trading eastward to the Hudson River and New York City. New York State alone was growing at the rate of half a million new inhabitants every ten years.

Then came the railroads, destined in the end to reduce most canals to a minor position, and to dry up some of them. The first railroad in what we now call the metropolitan district was the Camden and Amboy. Residents of Manhattan desiring to go to Philadelphia took a steamer to South Amboy, then went by rail to Camden, then took a ferry to the City of Brotherly Love. This service was opened in 1832. Seven years later, in 1839, three railways combined their facilities to give a direct rail route. On Manhattan itself the great-grandfather of subways, elevated lines, and transcontinental connections was the New York and Harlem, upon which, as early as 1832, one could ride all the way from Prince Street to Fourteenth Street—bell ringing, whistle tooting, and sparks from the wide wood-burning stack flying all over the neighborhood. The building of this road went forward with a deliberation which suggests some of our subway construction. It reached the Harlem River in 1837 and clattered into White Plains in 1844.

These early roads were intended mainly for passenger traffic, and they often avoided the routes of canals and navigable rivers. When five little railroads joined in 1842 to give direct rail service to Buffalo the State of New York imposed conditions which forbade them to compete with the Erie Canal for freight. Through connections by rail with Boston and with Albany were delayed because of the effective competition of steamers on Long Island Sound and the Hudson River. The Erie Railroad, chartered in 1832 for a through route to the West—or what was then called the West—was not completed between Piermont and Dunkirk until 1851. The pier or mole which was its first eastern terminus is still a landmark on the western bank of the Hudson, familiar to thousands of summer excursionists. But it was found before long that the nearer the rails could be brought to the city the bet-



C. POOL
LAW BOOKS
LAW BOOKS
PLAIN STATIONARY

Courtesy, I. N. Phelps Stokes and New York Public Library

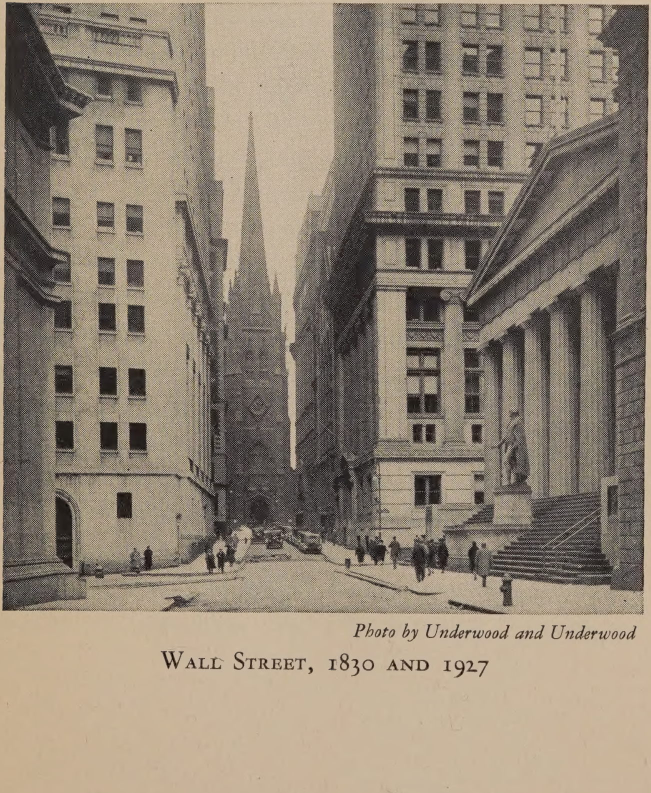


Photo by Underwood and Underwood

WALL STREET, 1830 AND 1927

ter, and the Erie came down to Jersey City. Direct rail connection between New York and East Albany was not opened until 1851. In 1853 the New York Central was formed by a merger of small roads between Albany and Buffalo. But it was not until 1866 that a bridge was built across the Hudson at Albany and passengers and freight could be carried without change from Buffalo to New York City. Incidentally the New York Central's right to run trains along the western side of Manhattan, past Riverside Drive, dates from this period. Before the Civil War trunk lines were coming rapidly. The Central Railroad of New Jersey, the Lehigh, the Lackawanna all came to tidewater opposite Manhattan. There were dreamers and fanatics who talked of bridges over the Hudson or tunnels under it, but no one took them seriously. Steam ferries did the work—the last word in speed and luxury. Everyone felt very modern and very metropolitan.

Meanwhile the shipping of the Port of New York was increasing enormously. Industry was becoming very important—the city grew, almost without knowing it, into the country's leading industrial center. Hammers rang merrily in shipyards; sugar refineries, flour mills, and grist mills sprang up; textile mills were established, the manufacture of clothing and of tobacco products assumed an importance not yet lost. But if we look a little more closely at what was going on we can see that these things were really by-products of commerce. New York was a spot where both importers and exporters had to break bulk. Goods had to be unloaded and repacked. It was natural that they should also be refined or re-processed. So New York remained essentially—we can almost say that it remains so to this day—what it was in the beginning, a great trading-post. Wharves, docks, railroad termini, warehouses, mercantile houses, and banks were the keys to its prosperity.

The years of railway-building between 1840 and 1860 were also years of glorious expansion on the sea. American tonnage surpassed that of any other nation and the tonnage entering the Port of New York surpassed that of any other American maritime city. The *Rainbow,* first of the great clipper ships, was built in a New York shipyard in 1845. But even while the clippers were coming to their brief and beautiful heyday the first steamship lines were crossing the Atlantic. Samuel Cunard began running steamships between Boston, Halifax, and Liverpool in 1840, but soon had to make New York his principal port. E. K. Collins, manager of a prosperous packet line, made a valiant effort to launch American competition against the English in 1850. Two of his steamers were lost at sea and he himself went down in the financial crash of 1857. After this—indeed, until the time of the World War—foreigners dominated the transatlantic carrying trade. The Civil War swept American merchant vessels from the sea and for more than a generation they did not reappear.

But this fact, humiliating to national pride, did not injure the prosperity of New York. In 1860 the combined exports and imports of the metropolis were valued at $311,358,064, or about one-half of the total foreign commerce of the United States. New Orleans was second, with about one-fifth of the total, while Boston, Philadelphia, and Baltimore, New York's ancient rivals, came next. New Orleans stood first in the export trade because of the large amount of cotton sent out by way of the Mississippi River, but most of the goods which the cotton bought came in by the Port of New York. In 1860 New York handled twice as much of the country's import trade as all the other American ports combined—manufactured goods, sugar, coffee, tropical foodstuffs, and various raw materials. Moreover, New York was cementing its position as the banking center of the country. It was in large measure to New York brokers, bankers, and insurance companies that the Southerners came for the financing of their principal crop. The Civil War killed whatever hope there may have been that New Orleans would successfully counteract this tendency.

With cities as with individuals, nothing succeeds like success. The ocean, the rivers, the canals, and the railroads had made New York City great. All roads led to Manhattan as once they had led to Rome. Population and capital came to it as bees come to a pot of honey. The city grew in two directions—vertically and horizontally. By 1860 Manhattan Island, which then composed New York City, had a population of more than 800,000, the area making up the present five boroughs of the greater city had more than 1,000,000, and the area which we now call the New York Region had more than 1,800,000. This last basis of calculation means most to us, since it is the area we shall be paying attention to throughout our discussion. In 1790 the figure for the Region—though no one then so much as dreamed of such a conception—was 231,166. Then, by decades, it grew as follows: 1800, 291,186; 1810, 364,885; 1820, 424,654; 1830, 551,333; 1840, 756,860; 1850, 1,163,141. We shall follow its other steps a little later.

If we make a mathematical curve to show this growth we shall find it fairly regular. New York has never been a boom town. It has had its slumps and its periods of depression, but babies have kept on being born and newcomers from Europe and from other parts of the United States have continued to arrive. In 1860, of course, the metropolitan Region was still far from being a reality and the statistics given reflect not only the growth of what was then called New York City, but the development of cities and towns which were then far more independent than they are today. At the same time the forces which were making Manhattan grow were also making the population and wealth of the Region grow. More and more the prosperity of one community was linked up with that of the others. State, county, and city lines mattered less and less, except when it came to electing officials, collecting taxes, and carrying on purely political functions.

Because so much of the freight of the country was already being carried to and from New York City every railroad in the East did its best to connect with Manhattan. Railroads were now growing into great systems and these systems struggled for the possession of advantageous positions along the New York waterfront. The present arrangement of the Port of New York and of the provisions for distributing and collecting goods within the city was a by-product of this conflict. No one planned it as a whole. No one decided just where the stations and freight depots should be located and just how the connecting lines should run in order to perform the most service with the least cost and trouble. The New York Central, which had gained control of the New York and Harlem, had for a long time the only land access to the heart of Manhattan. The other railways from the north and west halted, for the time being at least, on the New Jersey side, distributing their freight by means of the elaborate system of lighters, barges, and car floats which still exists. The burden which this system had to handle kept increasing. New York City retained between 40 and 50 per cent of the rapidly swelling export trade of the United States and fully two-thirds of the import trade.

This did not mean standing still. It meant handling more tonnage every year. Finally the congestion of the Port reached such a stage that development was slowed down. We shall go into the subject in a little more detail in a later chapter. Here, at any rate, was New York stepping on its own toes. The policy of letting everyone scramble for his own gain, and of paying little or no attention to the community's gain or loss, was turning out badly. We may say that this was the first serious setback that New York City ever had. It did not keep population from mounting or real-estate values from multiplying. But it cut down the efficiency of the machine called New York City, just as a badly-adjusted carburetor cuts down the efficiency of a gasoline engine. The experience proved what many other experiences were going to prove, that a great metropolis cannot be left to grow untended any more than a house can be erected or an automobile put together if each workman follows his own whims and pays no attention to anyone else. But New York, between 1860 and 1890, was prospering, just as the nation was, and was not yet reaping the fruits of its mistakes. In 1870 the Region had a population of 2,374,576; in 1880 a population of 3,026,367; in 1890 a population of 3,966,378. Steadily, as though Destiny were beating the drum, it plodded along.

In hard times and good times, during war and during peace, the city grew. In 1900, when Manhattan had 1,850,093, the Region had 5,384,734; in 1910 the Region had 7,466,942; in 1920 it had 8,-

979,055; and by the time this paragraph is in print it will certainly have more than 10,000,000. In order to get the picture of this vast accumulation of humanity clearly in mind it will be sensible to ask where these millions came from. Many of them, as everyone knows, were foreign in origin. Immigration played a very large part in the growth of New York until the opening of the World War, and even now, with restrictive laws in force, it is an important factor. Between 1890 and 1920 about one New Yorker in five was native-born of native parents; about two in five were native-born of foreign parents; and the remaining two out of every five were foreign-born. One reason New York City received so much of the immigrant population was that it was the principal port of entry. Another was that the rapidity of its growth opened up opportunities which the ambitious and energetic among the newcomers were quick to seize. At the same time the City and the Region were drawing from other parts of the United States and from Canada. There were some interesting racial movements. The negro population of New York City doubled, in proportion to the rest of the population, between 1890 and 1920. The world over, cities were becoming more attractive for all races. City people were gradually coming to have a majority over country people.

In the United States as a whole the urban population—by which is meant that portion which lives in incorporated cities of 2,500 or more—increased between 1900 and 1920 from 35.4 per cent of the whole population to 51.4 per cent. In New York State the increase between 1890 and 1920 was from 65 per cent to 82.7 per cent. Less than one person in five was left living on the farm. This throng which rushed into the cities, and especially into New York City, was engaged in a historic migration—one which we can reasonably compare with the rush of settlers into the Middle West and Far West in our earlier history. It represented the more enterprising elements in the races and countries from which it came. But the fact that New York City was peopled by individuals from so many and such diverse sources, speaking different native languages and thinking different thoughts, probably had much to do with our failure to attain a real civic consciousness—or perhaps we could call it a soul. But perhaps the time is coming when we can have that also.

We have now very briefly measured the city's growth and mentioned some of the causes of it. Let us pause a few minutes longer to see how people have lived in New York and how they and their shops and houses have spread out. This takes us back to the old vantage-point at the tip of Manhattan. We discover that though overcrowding of streets and houses has been aggravated by twentieth-century conditions, it existed at least a hundred years ago. The City of New York grew at first, and for a long time, by spreading northward on Manhattan. The solidly-built-up area for different periods has been estimated. The boundaries were always too irregular to be indicated in a sentence, but, roughly speaking, the city reached to Grand Street about 1808, to Fourteenth Street about 1836, to Thirty-fourth Street about 1854, and to Forty-second Street about 1858. The buildings of these epochs were between two and four stories high. Few were as high as six stories.

North of the settled area the real city abruptly terminated. For many years the region around Central Park was occupied by squatters, who built their shanties on land for which they paid no rent. The streets, or roads, in this section were ungraded, unpaved, and lacking in sewers. The population tended to pile up inside the boundary lines indicated above, and did not spill over until a considerable degree of congestion had developed. Overcrowding existed even when there was plenty of land within walking distance of what was then the heart of the city. The situation was far worse than would be caused by a similar degree of crowding today because of the laxity of building ordinances and the primitive sanitary arrangements of seventy-five years ago.

One cause of these conditions has been the continued stream of immigration, never seriously interrupted until our own generation. In 1818 and 1819, during about twenty months, Mayor Colden's office reported nearly 19,000 newly-arrived foreigners—a number equivalent to nearly two-thirds of the entire population of the lower East Side at that time. From then on the immigrants seem to have come more rapidly than decent accommodations could be found for them. For a long time there were no physical or mental tests for the immigrants to meet, and many who really belonged in the pauper class were dumped on American shores to shift for themselves. Many of these simply became a permanent burden upon public or private charity. Some, a step higher in the scale, were barely able to support themselves. The landlords, almost unhampered by legal restrictions, rented them hovels unfit for human habitation, breeding-places of disease, vice, and crime. Owners of land just outside the built-up limits of the city were meanwhile holding to their possessions like grim death, waiting to reap speculative profits.

In this way economic conditions which no one seemed able to break through caused tens of thousands of wretched human beings to be crowded into miserable caves without sun or fresh air while there was ample space easily accessible which might have provided both. The city itself added to the gravity of the problem by its slowness in grading and paving the streets leading northward toward the uncongested area. In short, New York was as vivid and deplorable an illustration as could have been found of the unnecessary evils which result when the economic and social forces within a great city are left to work at cross purposes without planning or coöperation. It is a question if anyone, even the "grasping landlords," gained by the conditions which crippled and even destroyed so many human lives. It is only in our own time that the situation has begun to mend itself, and we cannot yet boast that a solution has been found. Later on in our discussion we can examine the present state of affairs more closely and consider some of the suggested ways out.

Later on, too, we shall consider to what extent New York City has been, in whole or in part, "planned." Our streets, our parks, our water, gas, and electric systems, our transportation lines, may seem to answer the question offhand. They exist. After a fashion they serve their purposes. What more could be expected? But the fact is that nearly all these things have been provided to meet an insistent emergency and the city has never really caught up with its needs. There was intolerable congestion of street traffic along Broadway three-quarters of a century ago, and even at an earlier date. The first "rush hours" took place while the horse cars were still the principal means of conveyance. The "Brooklyn Bridge crush" was a thing of terror before the first subway train stirred a wheel. One reason for the city's failure to prepare for what was coming was the fact that growth usually outran expectations. It was once believed that it would be centuries before the land north of the Harlem would be "covered with houses." The science of predicting population is recent. Even had accurate predictions been made half a century or three-quarters of a century ago they would have been so astounding than no one would have believed them. Now, however, we can begin to look ahead with more certainty. The pioneer days are past. Unless new inventions completely alter men's ways of living we can foresee about what will happen to the New York Region for at least a generation ahead and make our preparations for it.

Chapter Three

ON THE JOB

THE great modern city is first of all a place where work is done. The more smoothly it can get its work done the larger surplus of wealth and leisure its inhabitants will have to make it beautiful and to provide for amusement and recreation. So, as we now look at the New York Region of the present day we may ask what its work principally is, how successfully it is doing it, what changes are taking place in the kind of work or in the geographical distribution of the plants, and what indications there are of the future. We may also consider what part of New York's work—to paraphrase Mr. Olmsted's phraseology—*must* be done here or can *best* be done here and what might as well or better be done somewhere else. A city, like an individual, does best if it specializes in the things it can do best. New York is clearly adapted because of natural conditions to perform certain functions, notably those of a port. It has adapted itself, in the process of growth, to other functions, such as retail merchandizing on a grand scale, banking, and entertainment. Certain enterprises, such as woodworking and ironworking, tend to be crowded outward as the city grows. Certain others, such as the manufacture of fine jewelry, of objects of art and of fine clothing, find themselves more at home in the greater city than in the smaller one. The pattern is always changing. When we come to discuss the planning of our great Region we shall see that the question is not whether there shall be these changes but whether they shall make for greater economy and convenience.

We cannot examine in detail all the industries and occupations which support a population of 10,000,000 persons. We can, however, inspect a few typical and important ones which have been surveyed by the Committee on Regional Plan, and see what they show as to general trends. We find that though manufacturing is growing in the New York Region it is being crowded away from its old centers. There were actually fewer factory workers on Manhattan Island, south of Fifty-ninth Street, in 1922 than in 1917. The figures indicate that there were 460,463 in 1917 and 419,784 in 1922—not a dramatic decline, but surprising in a city which seems to most of us to be growing bigger in every way every day. But if we broaden our industrial zone to take in a twenty-mile radius, which still leaves us well within the New York Region, we find that the number of industrial workers actually increased from 539,559 in 1917 to 661,960 in 1922. If we take a doughnut-shaped section of the outlying area we find a decline during the same years. It looks, therefore, as though the chemical manufacturers,

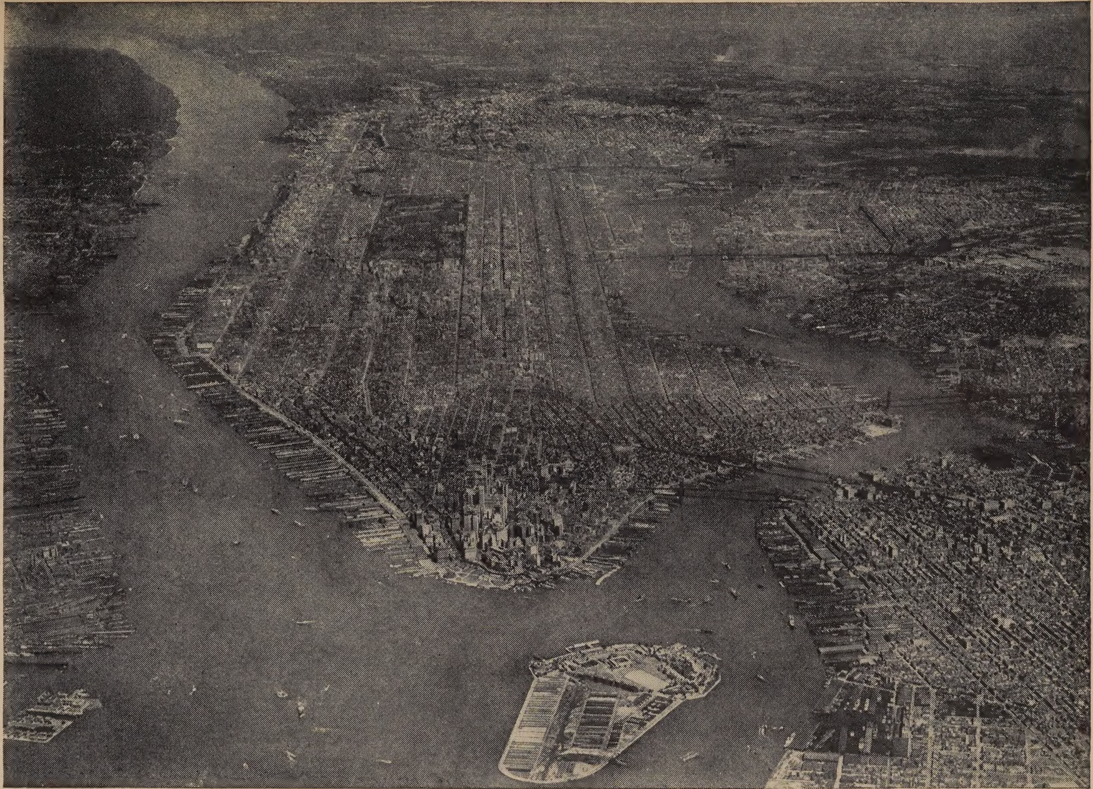


Photo by Fairchild Aerial Surveys, Inc.

THE HEART OF THE REGION

Manhattan Island, most congested area in the world, is surrounded by others only slightly less

clothing-makers, metal-workers, food-manufacturers, textile-manufacturers, woodworkers, and tobacco-manufacturers were gravitating to a halfway belt, where they are far enough out to escape the greatest congestion and far enough in to be near their customers.

Some fluctuations are due to changes in the way consumers live and consequently in the things they want. The swift development of the art of photography has caused the industry of photo-engraving to prosper. It has become both respectable and fashionable for women to use paint and lip-sticks, and in consequence the sale of these and other toilet preparations has mounted, with a corresponding increase in the number of persons employed in making them. The manufacture of cigars has fallen off, but that of cigarettes has grown. The coopers have lost most of their business, for obvious reasons. These are general tendencies, not peculiar to New York.

In many cases the actual manufacturing of goods has been taken away from the center of the Region, while much of the buying, selling, and financing is still done there. Fourth Avenue contains the heart of the silk industry, but no looms revolve there. Some of Manhattan's great stores show their heavier goods in samples in their main establishments, but deliver from warehouses outside the congested centers. But industries or parts of industries do not always move, even though paper calculations would show that they would gain by it. Human nature enters in. Men like to stay in familiar places and stick to familiar routines. Then there is a good deal of land, not far from the heart of the city—and a long, thin, eccentric organ that "heart" is!—which for one reason or another can be rented for a few years at less than its real value. There are industries which make use of obsolete buildings while the owners wait for the wreckers to come along. This is not necessarily to their discredit. The Region gains if otherwise unusable property is put to work. The best uses for given pieces of real estate are constantly changing as the pattern of urban life changes, and there are often periods when no one is quite certain what the new best use will be. No property-owner can guarantee himself or anybody else that his land will always be available for a dwelling-house or for a restaurant or for any other specified purpose.

In practice it has been found that the banker and the retail merchant, in the order named, can outbid any one else and have any sites they want. The city's financial district will probably remain where it is, centered about Wall Street. If it—meaning by "it" the powerful individuals who dominate it—cared to move it could go wherever it liked, because it could always afford to pay more for its land than any other interest. When we see an old Fifth Avenue residence come down and a store go up in its place we are watching a similar process. Given the conditions prevailing on Manhattan at the time, the arrival of that store was about as certain as the arrival of a glacier moving at a known speed down a mountain-side. Let us suppose that even the richest man in the world has endeavored to clear the site and establish a lumber yard. Even though no city ordinances stood in his way, the very absurdity of the project would have killed it. So we see that a sense of fitness does influence the pattern that a city makes, even though it does not altogether control it. Zoning is merely an expression of that sense of fitness.

Now let us turn to the nine industries surveyed by the Committee on Regional Plan in order to see how some of the general statements made can be specifically applied. If we think of these industries, not as bundles of statistics but as human beings earning a living, we need not find the subject dull. Many of the statistics available are some years old, but as we are studying trends rather than industries, this will not be a serious disadvantage. We may begin with tobacco, a relatively small industry in New York, but one which concerns a large proportion of the population. In 1922 there were 26,495 tobacco-workers in the Region, of whom about two-thirds were making cigars and one-third making cigarettes. A quarter of a century ago cigarette-making in the metropolitan area was localized in lower Manhattan. Not much more than a decade ago nearly two-thirds of the country's cigarettes were made in the metropolitan area of New York. Since then the actual bulk of production in New York has increased, but

New York's share of the total output of the country has fallen to one-third or less. Large factories have taken the place of small ones, and most of the cigarettes come from North Carolina and Virginia, near the places where the ingredients are raised. In the New York area the factories have tended to move away from their old and congested quarters to new ones farther out. Comparatively little labor is needed in proportion to the output.

One or two facts stand out. New York makes only about enough domestic cigarettes for its own use, but it makes nearly all the Turkish cigarettes smoked in the United States. Whether he smokes Virginia or Turkish, therefore, the New York cigarette-smoker is probably patronizing a home industry. But cigarettes can be made almost anywhere and the freight is small in proportion to their value. If, as seems likely in the long run, the city tends to produce only those commodities which either *must* be produced here or can be produced here more cheaply than elsewhere, the cigarette industry may be squeezed out altogether.

Cigar-making brings in entirely different problems. While the use of cigarettes has increased enormously since the beginning of the century, the use of cigars has not increased so rapidly as population—perhaps because women have not yet taken to smoking them. Then, too, the labor cost in a cigar is high—sometimes as high as 40 per cent of the selling price. The effect of these two causes is that few new factories are being built in the crowded parts of the New York Region and that cigar manufacturers are looking for locations where an abundant supply of feminine labor can be found. Already about two-thirds of the cigar-makers in New York and its environs are women. Highly skilled male labor is still used in small shops where expensive cigars are made by hand, and the number of such shops on Manhattan is actually increasing. But the making of cigars by hand is on the decrease in the country at large, and it may be that machinery will ultimately be invented which will replace hand work almost entirely.

Perhaps the crowds would not seem any smaller if the cigar-makers packed up their tools and left Manhattan altogether. Yet they and their industry do tell us something as to the way in which cities grow and change. They, with other workers of whom the general public may know very little, help to build up the community. Then, if fashions change or mechanical improvements alter the nature of their trade, they decline in numbers or disappear, and others take their places. The trades that can most profitably be carried on tend to crowd out those that are less fitted to the environment of the great city.

The woodworking industry, like the tobacco industry, gained ground on Manhattan after the beginning of the present century, then began to lose. Time was when unsawn logs were brought to Manhattan to be dressed and treated there. Now the only logs brought in are rare tropical woods, such as mahogany. Other woods can best be sawed and trimmed near the forests where they are cut. There are a few wood products, such as crates, boxes, and window-frames, which are so bulky that it is expensive to carry them far. These can best be made near where they are to be used. Cabinet-makers and makers of fine furniture can often afford to pay high rents and have their shops near the congested areas in order to be near their customers. There are a few factories around New York which assemble furniture which has been shipped "knocked down" from distant points. But it does not pay manufacturers, as a rule, to bring wood to New York in order to manufacture it into products to be sold outside of New York. The only exceptions are those in which the New York trade mark means something to the customer, as it does in the case of pianos.

The piano industry has a long and picturesque history on Manhattan. At first its center was in the district on the East Side south of Fourteenth Street, and the German artisans who did the highly skilled work required lived in the neighborhood. As rents in this section went up the factories were compelled to move, some going to Eighth Avenue, near Fiftieth Street, and others setting up in The Bronx and Queens. One of the difficulties the manufacturers had when they built their factories in the latter borough was that their workers did not like to leave their old neighborhoods, where shops and amusements were handy and there was an established social life. The move was economically sound, but it had to reckon with a well known trait in human nature. Perhaps this is as good an illustration as any of the reason why cities do not always do what a competent mathematician might predict they would do. By degrees the German workers were replaced by Italians—in this fashion does the racial complexion of a city change. In the same way Italians and Poles have made places for themselves in fine wood-carving, first done in New York by Germans.

There are smaller industries into which woodworking enters and which it would be interesting to look into if we had time. We should learn that New York City is the largest maker of umbrella handles in the United States; that it is and promises to remain the center of the lead-pencil industry; that it manufactures more corks and also more tobacco pipes than any other American city; and that its manufactures of jewelry boxes and dental-instrument showcases are important. Perhaps it is not necessary that most of us should know or remember these facts, except as they help again to build up a picture of the way our city is put together. Each specialty, each subdivision of an industry, has its own peculiar problems. While the woodworking trades are, as we have seen, moving away from the center of the city, the jewelry-box manufacturer finds it worth while to pay the high rents essential if he is to be near his customers. We can lay down the general rule that the center of the city is a trading area. It is that which gives it its value.

When we turn to the textile industries we find a business which, unlike tobacco and woodworking, has been more than holding its own in the New York Region. Textiles and their products rank first among American industries in the number of wage-earners employed, second in the values added by manufacture, and third in the total value of the products. In New York the garment trades come first. In them we find the principal sources of New York's wealth as well as some of the principal causes of the difficulties it is having with transportation, traffic, and housing. A common characteristic of the textile and garment trades is that they have used immigrant labor almost exclusively. The Jewish and later the Italian workers in these trades have been ambitious, energetic, and individualistic—all traits which have left their mark on the industries and on the city. At the same time they have been under the disadvantage which every race has to encounter when it migrates to a country where the language and the customs are strange—as great a disadvantage, perhaps, as an American would find if he had to make a living in Russia or China. When we look at textiles and at the garment trades, therefore, we should bear in mind that they are not only great industries, but also great experiments in Americanization. The picture of the city is always a human picture. There are always things in it which cannot be measured in dollars and cents.

First in importance comes the women's garment industry. New York City produces nearly three-fourths of all the women's clothing made in the United States. Out of every six persons engaged in manufacturing in the city one is making women's clothing. Out of every six dollars produced by the city's industries one is earned by this branch of the needle trades. The effects of this enormous business upon the number of trucks in the streets, the crowding of subways, elevated lines and sidewalks, the necessary factories, showrooms and warehouses, the demand for hotel space for buyers from other cities—all this is obvious. The garment trades' solution of their problems is of vital concern to the whole city. One striking feature in the making of women's wear is the manner in which the factories have been able to maintain themselves near the business center of the city. At one time they were concentrated on the lower East Side, near the homes of the workers. The development of rapid transit made this proximity less necessary, and the industry has moved uptown, to be near its market, while a large proportion of the workers ride long distances to their jobs.

Perhaps the time will come when the factories will be centralized, as has occurred in Chicago, and removed to the outskirts of the city. As the industry is now organized, however, most of the "factories" are small, the contractors who do the work have to be near the jobbers who sell it to the retailers, and the jobbers, in their turn, find it necessary to maintain their showrooms where the buyers can most conveniently come. The buyers like to go to hotels which are near the great railway terminals. They also like to be near the theaters, restaurants, and principal shopping streets. The new Garment Center which has grown up in the past few years near the Pennsylvania Station is a response to this demand, as well as an attempt to organize an industry in which conditions have been and still are chaotic. The situation is changing rapidly, but as long as style is an important element in women's clothing it will be hard to dislodge this branch of manufacture from the central area. The man who makes dresses is in the same fix as the man who makes jewelry boxes. If he cannot find a purchaser when he needs one his work may become valueless.

We might expect to find a different condition in the men's clothing industry, and in fact we do. Men's styles change, but not so frequently or so extensively as women's. Ordering by sample or by description is far more satisfactory. So there is a tendency for the contractors who do the actual manufacturing to move away from the center of the city, to the lower East Side, to Brooklyn, and eventually, in all likelihood, still farther out. The selling offices, meanwhile, remain near the heart of things, where the buyers have no trouble in finding them.

New York City is not quite so important in the men's clothing industry as in the women's. But it does have more than one-fourth of the workers in men's wear and it does produce more than one-third of the country's suits and overcoats, measured by value. Like so many other trades in New York, its shops have witnessed a procession of workers—first Germans and Englishmen, then Jews and Italians. Like the women's garment trade, it is very individualistic, with many small contractors and manufacturers who come and go in the business according to the chances of the market.

A great many of the manufacturers still occupy buildings between Houston and Fourteenth streets, which formed part of the retail center of thirty-five or forty years ago. They are temporary tenants, for some day the value of the land they occupy will probably compel the landowners to tear down the obsolete structures now used and erect modern buildings at prices the industry cannot afford to pay. Then the movement toward the outskirts will be hastened. Meanwhile these shops are a good illustration of what happens to a district which has temporarily fallen behind other districts in a rapidly growing city. Of course this is no criticism of an important industry. It is simply another way of saying that the making of men's wear is one of those occupations which may gain something by being near their market but which cannot afford to pay the high rents which such a location normally calls for. So here is another instance in which the layout of our city, with its attendant problems of traffic and transportation, is certain to change. Change is inevitable. It is the intelligent control of change which will make the difference between a comfortable and an uncomfortable, a successful and unsuccessful, city.

Besides finished clothing, the textile industry in the New York Region includes the manufacture of knit goods, silk goods, cotton goods, woolens and worsteds, jute, hemp and linen products, and various dyeing and finishing processes. Most of these contribute materials to the garment trades. About 10 per cent of the textile workers of the United States are employed in and around New York. These industries, as a rule, do not have to be in immediate physical touch with the city's central markets. Relatively few of them are in the area on Manhattan below Fifty-ninth Street. Most of them, however, are within the twenty-mile zone. They do not go in for standardization or large-scale production. In fact, as we are coming to see, very few New York industries do. For instance, New York is an important center for the making of sweaters, bathing-suits, and similar knitted articles which are subject to rapid style changes. On the other hand, knitted underwear, which is a more stable product, is a relatively minor activity. Even the silk industry, long centered at Paterson, New Jersey, has begun to decline in comparison with other localities, and the average size of the Paterson silk factories is diminishing.

This is partly due to labor troubles and some other causes which need not concern us at present. But here, too, we can see New York's tendency toward individualism and specialization at work. The dyeing and finishing plants are a better illustration of industries which are definitely adapted to the localities where they have grown up. The majority of them are in the metropolitan areas of Bergen and Passaic counties, New Jersey, where they have found the space and the chemically pure water that they need, and from which they can send their products to the New York market. They are probably there to stay—a permanent bit of design in our swiftly altering metropolitan pattern.

In a Region where there are approximately 10,000,000 people, most of whom eat three meals a day, the manufacture of food products is naturally important. In 1922 this industry employed 82,472 workers, or about two-thirds as many as are engaged in the textile industry. As it has been increasing about as rapidly as population, the number must now be well past 90,000. It divides itself into classes which have little in common except that they all furnish things to eat—bakeries, confectioneries, sugar-refineries, slaughtering and meat packing, and various smaller branches.

Baking comes first, with about a third of the total number of food-producers. There are two kinds of bakers—those who make bread, cake, and other perishables which must be quickly marketed, and those who make cookies, biscuits, crackers, and other package goods which keep fresh for a considerable time. The latter establishments account for the fact that with about 9 per cent of the country's population the New York Region does about 15 per cent of the baking—or did when the last reliable statistics on the subject were collected.

It is pleasant to know that conditions in the bread bakeries have improved greatly during the past ten or fifteen years. At one time shops were small, baking was done in many cases in unsanitary cellars, and the workers were not inspected to insure their cleanliness and freedom from communicable diseases. Sanitary regulations, joined with the increase in large bakeries which make a point of their well-advertised cleanliness, have done wonders. The small neighborhood baker is disappearing. His place is being taken by the plant which distributes to retailers over a radius of five or six miles.

Baking of this sort naturally follows population. It is one of those industries which cannot be exiled to the outlying regions or to some other city. The baking of non-perishable package goods is more foot-free, and here again we find our city pattern changing. In this field New York is losing ground, since other cities have little to gain by shipping their flour, sugar, and spices to our ovens. The remaining factories would do as well in most respects if they moved to the outer zones, or perhaps outside the Region altogether. They keep near the center of the city, however, because their most important raw material is not flour or sugar, but labor. Here is an example of one of the advantages of a concentrated population, to be set off against some of its disadvantages. It offers the employer a large "labor pool." It offers the worker a wide choice of employers.

The sugar-refiners employ only about one-third as many persons as the bakers, but the value of their product is greater than that of all the bakeries put together. New York is still the country's leading city in sugar-refining, but it now refines only half of the total sugar imports, as compared with two-thirds a decade or more ago. This is not because its total output has dropped, for on the contrary it has grown, but because the nation is eating more sugar. Sugar-refining is a neat illustration of one of those functions which the Port of New York is admirably fitted to perform. About one pound of coal is used in refining two pounds of sugar. It would not pay to haul this coal to the West Indies, from which most of our sugar comes. Nor would it pay to haul the sugar to the coal mines. So coal and sugar meet conveniently on the New York waterfront, though they do not have to be handled in the congested areas of the port. This is one New York industry which requires large-scale, standardized production —an exception which proves the rule.

We find, as might be expected, that New York stands high in the manufacture of products in which a good deal of sugar is used. It produces about one-seventh of the candy, ice-cream, and chewing-gum consumed in the United States. In chewing-gum alone it stands at the head with one-fourth of the nation's output.

Slaughtering and meat-packing employ almost as many workers as sugar-refining and have a total product of about the same value. But nearly all of this is for local consumption, just as was the output of the old-fashioned small-town slaughter-house. With 9 per cent of the population the New York Region turns out only 6 per cent of the country's meat products. If it were not for the religious requirements of the large Jewish population its share would be still smaller. These requirements, which are sanitary in their nature, ordinarily forbid the use of meat more than seventy-two hours after the animal is killed. For this reason Manhattan maintains large slaughter-houses instead of bringing in its meat supplies in cold storage. Early difficulties of transportation caused these slaughter-houses to be located in the Forty-second Street belt, near the very heart of the city. It is generally agreed that they do not belong there, and before many years we may expect to see them removed to less prominent and less valuable sites.

We cannot go very far into the lesser food industries without losing ourselves in details that are not necessary to our purposes. New York manufactures many cocoa and chocolate products—perhaps twice as large an output as it consumes. It is prominent in the processing of teas and spices, though it has fallen from its proud position as the predominant coffee-roasting center of the United States. The beverage industry has declined because of the prohibition laws. A drop in the number of macaroni plants tells the story of the reduction of immigration and of the adaptation of those already here to the food habits of the new country. Increases in the output of milk-pasteurizing plants show how new hygienic methods are making headway. We can hardly open a factory door without learning something not merely about the industry being carried on inside, but about the tendencies of our city as a whole. Unfortunately, we cannot stop to open many factory doors.

Printing is almost as necessary to a modern community as food itself. The largest city of a country naturally draws to it a great part of the publishing, and with it much of the printing. Moreover, a city which is a great business center requires a great deal of commercial printing. So it is not surprising to learn that about one factory worker in every seventeen in the New York Region is a printer and that New York does nearly one-fifth of the country's printing. In recent years several important plants have moved away from Manhattan Island and a few magazines formerly printed here are now manufactured in the Middle West. On the whole, however, the printing industry in New York City is growing rapidly and holding its own with respect to the rest of the United States.

But the industry divides itself into two parts—one to which time is highly important, the other to which it is not. The former can afford to pay the high rents necessary to remain on Manhattan. Newspapers are excellent illustrations. A great New York newspaper must be able to reach its patrons in the briefest possible time or its value is lost. This means that it must be within striking distance of the city's centers of intense activity—the financial district at the lower end of Manhattan and the theatrical and shopping district focused about Times Square. The same principles hold for newspapers in Brooklyn and in the smaller communities. Small job printers, doing rush work, are almost as closely bound to the principal business districts. Book printers and those specializing in large stock orders, on the other hand, can save rent without losing business by going farther out. As congestion increases and real estate prices go up this is what they are doing. Between 1900 and 1922 the number of workers in the printing trades below Fifty-ninth Street, Manhattan, dropped from 85 per cent of all those in the Region to 73.5 per cent. The years since 1922 have undoubtedly seen a further decrease. Meanwhile there have been large gains in printing shops in Queens and in New Jersey. This does not mean that Manhattan has lost ground absolutely. It has merely failed to keep up with the general advance within the Region.

Moreover, it has marked time in certain departments of printing, while making progress in others. In other words, there has been increased specialization. The industry is tending to do some of the things that any sound regional plan would encourage. Yet the movement is not altogether successful. Employers find it hard to tempt skilled labor away from the heart of things. Despite Manhattan's inconveniences, men like to be within reach of Fifth Avenue and Broadway and all that those two names imply.

The heavy-metal industries have long been important in and around Manhattan, but in the last quarter-century the squeeze of the growing city has crowded them into the less congested parts of Brooklyn, Queens, and New Jersey, and may ultimately crowd them back into the highly specialized Pittsburgh area. Light-metal products, for which the city has a myriad uses, continue to be of immense importance—so important that the industry in New York and its environs finds jobs for about 162,000 workers. Even these do not make the city the leading metal center, however, for with about 9 per cent of the population of the country New York and its surrounding Region produce only about 8.5 per cent of the metal goods of the United States.

To describe in detail all the kinds of work in metals done here would be almost to tell the whole story of our metallic modern civilization. From water-heaters and stoves to fire trucks, automobiles, and airplanes; from typewriters and vacuum-cleaners to surgical instruments and electrical signs, from pipe cuttings and baby carriages to fine jeweler's work in platinum, the list is long and varied.

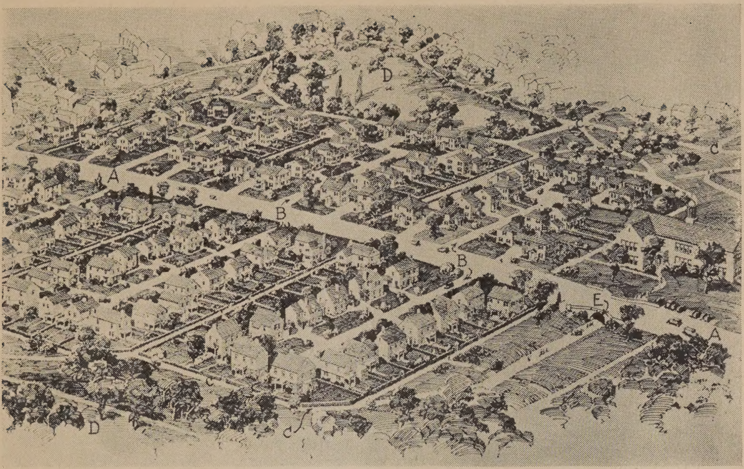
Perhaps it is in jewelry that we have the best illustration of an industry fitted to a metropolitan area. Manhattan makes between 80 and 85 per cent of America's fine jewelry, and Newark between 90 and 95 per cent of the moderately priced. Incidentally, the other great jewelry center is Providence, Rhode Island, where most of the cheaper jewelry is made. Jewelers can afford to pay high rents, since the space they need is in small proportion to the value of their product, and they gain a good deal by being near the ultimate consumer. So in New York City they have followed the retailer as he has moved uptown. When we buy a ring which has been manufactured not far from Fifth Avenue we may feel sure that our metropolis in that case is functioning normally. If we could buy half a ton of raw copper from a factory similarly located we would feel that something was wrong. It might not, however, be much more foolish than the presence of slaughter-houses in the Forty-second Street belt, to which we referred a few paragraphs earlier.

The ninth of our group of industries is the chemical. Here, too, we see the difference existing among branches of what is technically one classification. The New York Region is the largest chemical center in the United States, with between 15 and 20 per cent of the nation's product. Potash, petroleum products, paints, inks, fertilizers, and toilet preparations are all parts of the chemical industry. If we examine the figures of growth we find that three chemical groups—heavy chemicals, explosives, and soap and toilet preparations—increased by more than 300 per cent during the first quarter of the present century. The World War had a great deal to do with the growth of the first two. The third is more significant, for it tells of changes in social life and habits. The growing use of cosmetics, to which New York so largely ministers, is a story all by itself. In this case the metropolis not only sets the style but provides the means of following it.

The heavy chemical industries, like those in metal and in wood, have tended to migrate from the expensive land near the center of the city to less expensive, as well as more convenient, farther out. Some of them, however, require to be near deep water. Fine chemicals, such as perfumery and cosmetics, can pay for land of high value, just as jewelry and fine clothing can. But they are not in such need of being near the ultimate consumer and they, too, are now tending to withdraw. The New York name has its magic, however, and some New Jersey factories make use of a Manhattan address. The same thing is not true of fertilizers or explosives, though the former were until lately produced in some quantity from the refuse of Manhattan's slaughter-houses.

This very hasty glance at nine of the New York Region's industries has perhaps suggested something of their variety, has outlined the changes that are going on within them, and has indicated that in the long run the city does tend to sort out its activities and do its work where that work can most conveniently and economically be done. But, as will be seen when we come to discuss traffic, transit, housing, and other metropolitan problems, this process is often unnecessarily painful and tedious. Sometimes, too, the pattern of a city sets so hard that there is no possibility of changing it. In newly urbanized areas trouble and loss can be saved if we determine in advance about where our heavy and our light industries, our shopping centers, our financial districts, and our residence neighborhoods had best be. This is what regional planning means, in part at least.

No account of the city at work could be complete if we omitted the buying and selling which give it so much of its importance and keep so many of its inhabitants busy. So we must consider the wholesale markets, the retail shopping district, and the financial district—three different aspects of the buying and selling processes. Wholesale markets are of as many different sorts as there are classes of commodities. They differ, naturally, in their needs. Perishable fruits and vegetables must usually be brought bodily to the spot where they are to be disposed of. Cotton, on the other hand, can be satisfactorily sold by sample. But all markets have the common need of being handy to the customers they are to serve. Some of them do this by scattering rather widely, as the



Courtesy of the City Housing Corporation

Bird's-eye-view of a residence section in Radburn showing: (A) main traffic artery without sidewalks; (B) roadways giving access to houses; (C) sidewalks adjoining yards and park; (D) park; (E) underpass to school

Courtesy of the City Housing Corporation

Sidewalks adjoin parks and not streets in Radburn. No child needs to cross a street to go to school or park

MODEL TOWN OF RADBURN, NEW JERSEY, WHERE PROVISION IS BEING MADE FOR INDUSTRY AS WELL AS RESIDENCE

wholesale grocers on Manhattan have done since 1900. Some of them achieve it by huddling in dense clumps, like bees in a hive, as the wholesale furriers have done north of Twenty-third Street and west of Broadway, Manhattan. Much depends upon whether the goods bought are for local consumption or are to be resold elsewhere, upon whether they are wholly or only partially manufactured, upon whether they will keep indefinitely or not.

The visiting buyer is a very real figure in New York's economic life, as well as in some of its fiction and popular traditions. Five thousand of the largest dry-goods and department stores in the United States send their purchasing agents regularly to Manhattan. A count made some years ago showed nearly five hundred permanent purchasing agents resident in Manhattan, each representing anywhere from one to 138 out-of-town stores. In the clothing industry, as we have seen, the markets and the workshops tend to be close together as well as close to the hotel and theater districts. Strange situations sometimes exist. New York is already a close second to London as a world center of the fur trade. Yet New York merchants sometimes buy American furs at the London auctions. On the other hand, New York is taking business away from St. Louis, once a great and romantic fur-trading city.

Most of New York's markets of non-perishables are definitely centralized, though they have a tendency to migrate all over the map. Sometimes new centers spring up in competition with old, as when the milliners advanced along Broadway from south of Fourteenth Street to north of Thirty-fourth Street. The shoe market, once a solid little clump west of Broadway in approximately the latitude of City Hall Park, began to scatter when the element of style in women's shoes became of first-rate importance. It may ultimately go uptown. The jewelers, once centered around Maiden Lane, are now well represented along upper Fifth Avenue.

The location of fruit and produce markets is determined in large measure by the means of transportation. The center happens to be, so far as Manhattan is concerned, the Washington Street district of the lower West Side. In fact, nearly all the fruit and vegetables consumed in the metropolitan area pass through this market. It has clung steadily to its present location for several decades, though increasing in size, and there is every indication that it will stay put. Its work is fast and intensive, for its entire stock is renewed about every forty-eight hours. The main market for butter, cheese, and allied products is on the same side of Manhattan, at about Greenwich and Harrison Streets. The great wholesale fish market, where former Governor Smith worked as a boy, is on the lower East Side, in the shadows of the Brooklyn Bridge. The markets for fresh meat are much less centralized, though many of them are grouped near the slaughter-houses of Manhattan. The most important single market for meat and poultry is probably at the foot of West Fourteenth Street. Coffee, tea, and spices are fairly well centered on the lower East Side about Water and Front Streets. Wholesale grocers used to be found on the lower West Side, below Canal Street. They served not only most of the 16,000 retail grocers of New York City, but also hotels, institutions, transportation companies, and so on. But the market has not the solidity it once had and in recent years it has been scattering throughout the metropolitan area. One reason was the heavy cost of trucking, arising largely from that growing congestion of the streets which we shall consider later on. Some wholesale grocers have had to pay nearly 4 per cent of their net sales for expenses of transportation within the city.

Warehouses necessarily play a large part in wholesale markets of all non-perishable goods. They cluster, on Manhattan and in Brooklyn, along the shores of the Hudson and East rivers. The newer ones find Manhattan too expensive and are being built in almost every case in Brooklyn or New Jersey. Perhaps in time almost no goods will be brought into the center of the city that are not to be consumed or processed there. But this will not prevent the city from performing the very important function of price-fixing, for that can be done by samples whenever a business is sufficiently well organized and standardized.

When we come to the retail shopping, theatrical, and financial districts we reach what is to many people the essence of New York. It is in these fields, certainly, that the city's quality shows itself in the most conspicuous fashion and its leadership is most unmistakably asserted. Retail shopping begins with the small neighborhood stores, which are not conspicuously different from those of smaller cities and towns. Those which carry necessities are naturally more widely scattered than those which deal in luxuries. Food and other daily requirements must be readily accessible to everyone. Pianos or rugs, or anything else bought rarely by any single purchaser, can be centralized. So the local store builds itself up in size and complexity as it turns into a rallying-point for a larger and larger community.

Dozens of small shopping centers have been created in and around New York. Shopping districts second only to those of Manhattan have arisen in Brooklyn, in The Bronx, in Newark, Jersey City, and other west-bank towns. Manhattan itself has lesser shopping districts—the specialty shops which serve the financial district, sections of First Avenue and Avenue A, One Hundred and Twenty-fifth Street, and so on. When we think of shopping in New York, however, as when we think of theaters, it is the broad strip lying between Thirty-fourth Street and the lower end of Central Park that comes to mind. Here our city is at its showiest, and here, as we shall see in our next chapter—and what New Yorker does not know it already?—congestion is at its worst. Into this district there pour daily the greater part of the city's more than 300,000 visitors, as well as a considerable number of its millions of workers.

As we have seen, retail stores can crowd out any other enterprise with the single exception of banking. Among retail stores those selling articles of greatest luxury—for instance, jewels, rich furs, rare antiques, works of art—can usually bid successfully for space against stores carrying goods of a more prosaic sort. In fact, they not only can but must.

A grocery store may survive on the patronage of 641 inhabitants, whereas a furrier must have 20,467. The store must be where many feet go by and many curious eyes turn toward the window displays. On Manhattan the central shopping and amusement belt has been determined by the presence of two great stations—the Pennsylvania and the Grand Central. It has been prevented from spilling northward by the barrier of Central Park.

Location within this area has importance in accordance with the nature of the business concerned. Easy access to subways is valuable to a department store which caters to a demand for moderately priced goods. A site which can be reached easily by private automobiles is better for those which seek the more exclusive trade.

New York's great stores and exclusive shops have migrated northward as the city has grown. The district was at Canal Street in 1850, at Fourteenth Street in 1880, at Twenty-third Street a decade or so later, at Thirty-fourth Street by the end of the century. Subways, bridges, the development of upper Manhattan, The Bronx and Westchester, pulled it north. Curiously enough, Forty-second Street has failed to follow Thirty-fourth as a great shopping street. The next jump may be to Fifty-seventh. Or, as some observers think, the city may take up slack by reviving shopping activities in the district below Thirty-fourth Street, which has gone back somewhat in prestige. The development of a new high-class residential area north of Washington Square will contribute to this tendency.

The day may come, of course, when an entirely new retail shopping district will grow up, to steal the honors from the old. A great new central railway terminal, say at Mott Haven, might have this effect. But the prestige of the old sites will work against such a revolution. In any case the supremacy of New York as a shopping place for America and even, in some respects, for visitors from other countries, is not likely to be threatened. The city shows every sign of becoming a world center of art and culture. Its auctions of works of art are already more important than those of London, Paris, and Vienna. Even in the matter of feminine styles it is growing less dependent upon Paris. In music, in the drama, to some extent in literature, it sets a national standard. It is this function that makes it "New York." But we must not forget that the city's material greatness rests to a great extent upon the industries and trades we have glanced at—textiles, metals, chemicals, the framework upon which the gigantic structure of the metropolis is erected.

Lastly comes the financial district, whose importance to New York City is visible in the great blocks and towers which dominate the skyline at the lower end of Manhattan. As we have seen, the bankers have been here since the beginning and are likely to remain for a long time to come. The new banks around Forty-second Street are branches of Wall Street rather than a new financial section. Wall Street continues to dominate in investment banking, commercial banking, insurance, security sales, and the related activities. Originally it was created by the port and it still gives an important part of its energies to foreign trade. The offices of exporters, importers, ship brokers, freight forwarders, customhouse brokers, and consuls and other agents of foreign governments are conveniently near. But except in the case of local accounts, which are not the most important part of Wall Street's business, nearness to the centers of traffic is not essential. Many of these local accounts are now being handled by branch banks uptown.

One of the factors which has kept Wall Street important has been the development of what are called investment banks—that is, institutions which act as fiscal agents for corporations and deal in investment securities. These banks have sales offices not only in New York, but in other cities. Their associations are close, especially when a large security issue has to be floated, and they gain in convenience by being near together. More than 90 per cent of the investment bankers of New York City were located south of Fulton Street in 1922 and the proportion probably has not greatly decreased.

Here, too, are the seven organized exchanges, with a total membership of more than four thousand brokers who deal in securities. Perhaps it is one of these, the New York Stock Exchange, of which most people think when they think of Wall Street. The others are the Curb Market, though it now has a building of its own instead of a "curb"; the Cotton Exchange, the Coffee and Sugar Exchange, the Produce Exchange, the Cocoa Exchange, and the Rubber Exchange. Naturally, the presence of these exchanges, and of the bankers and insurance companies, has attracted businesses which have occasion to deal with them.

The largest group of important executive offices in the United States is in the Wall Street district, though there is now a tendency for some of them to move uptown to the Forty-second Street zone. As far as can be foreseen, "Big Business," with its dependents, clients, and satellites, is firmly planted downtown and will remain there. It will be the smaller enterprises, with no direct connection with the large industrial corporations, railroads, shipping companies, brokerage houses, insurance companies, and the great banks that will find a place for themselves uptown. So for an indefinite time to come the daily migration of many thousands of clerical workers into lower Manhattan, with its attendant problems of congestion, seems likely to continue.

In this sketch of New York at work we have seen a little of what takes New Yorkers to and fro, how the city earns its living, and why it is that streets and means of transportation are so crowded. New York, like a smaller community, must work, or it would soon cease to exist. Its economic life is built out of the individual's job, just as its great buildings are pieced together out of many bits of steel, stone, wood, brick, and cement. Its greatest danger is that the very complexity and centralization which have helped to make it wealthy will so add to the difficulties of traffic and transportation that the game will not be worth the candle. In the next chapter we shall look at the problem of carrying people and goods from place to place, limiting ourselves to considering things as they are. Later we shall return to the subject to ask in what ways these services may be made better.

Chapter Four

TRAFFIC WAYS

THE streets of a city may be compared to the veins and arteries of the human body, especially if we include under the title of street not only the open right of way, but the subways that run under it and the elevated railroads that run above it. So long as these function properly the community will be healthy. Nothing can take the place of good circulation in a city any more than in a human being. If traffic on the surface, transit by means of street cars, subway trains, elevated trains, and railroad trains, and the transportation of goods in all the convenient ways go forward smoothly, the other civic functions cannot go fatally wrong. But we find, as a matter of fact, that most modern cities, and New York City more than most, do suffer from a congestion that cuts into their efficiency and detracts from the comfort of their inhabitants.

When we think of streets we are likely to think at the same time of traffic—that is to say, of their use as a means of getting from one place to another. But they also furnish access to the buildings which front upon them, they admit light and air, and they provide a space, publicly owned, where the necessary mains for water, gas, electricity, and sewage can be laid. A measure which relieves traffic may hinder some of these other services. Thus, a citizen residing or doing business on a one-way street is impeded in his access to his own front door. There is a traffic problem, as everyone knows, but behind the traffic problem is a street problem. The ideal street would be fitted to all uses required of it. It might be a thoroughfare, but it would also be easily accessible for local errands. The height and bulk of its buildings would be in proportion to its width, to those of other buildings on neighboring streets, and to the purposes, whether residential, commercial, or industrial, which that portion of the city served.

Street congestion has probably existed ever since there were cities and streets. The deep ruts worn by chariots in the narrow streets of Pompeii are part of the evidence which shows that it puzzled the brains of the Romans of that long-past first-century generation. In mediæval cities it was aggravated by the narrowness of the alleys which passed for thoroughfares and by the poor quality or total absence of paving. We read that one of the minor irritations behind the French Revolution was the number of street accidents caused by the reckless driving of the nobility. To jump to the early modern period of our own city, we find that the crowding of omnibuses and carts on lower Broadway in 1850 was a very serious matter. A surface railway was one of the means proposed for curing it. We can measure the topsy-turvy processes of time by reflecting that the removal of surface railways is now being urged for the same reasons. The clumsy, horse-drawn omnibus was practically driven out of existence by the superiority, first of the horse car, then of the electric car. Now motor-buses, because of their greater flexibility, are rendering the electric car obsolete for use on busy city thoroughfares.

But the congestion of modern city streets really comes from a wholly different cause from that of the streets of three-quarters of a century ago. The cause then was the slowness and clumsiness of the vehicles used. There were fewer vehicles then in proportion to population and public conveyances were far less freely used. In 1860 each citizen rode 43 times on a public vehicle. By 1920 this figure had increased to 405, by 1925 to 462. We are thus in a way the victims of our own inventions. The automobile is so much more efficient than the horse and wagon that many more are in use. The means of transportation have so improved that people live farther from their work and do more traveling.

The traffic problem in its modern form came in with the gasoline-driven vehicle. In 1895 there were only 300 registered automobiles in the United States. In 1915 there were 2,500,000. In 1923 there were 15,000,000. A few years more and this figure will undoubtedly have doubled. In New York City alone the total rose from 187,258 in 1919 to 572,970 in 1926. In the New York Region, between 1919 and 1926, the number increased from 404,787 to 1,329,960. Lumped in this fashion, these statistics may seem dull, but they stand for a marvelously interesting change in the community's habits of living. We may look for the increase in automobile ownership to continue. The studies of the regional survey indicate that by 1935 there will be 3,150,000 automobiles in the Region, and that by 1965 those of us who are still living will have to cope with a registration of 6,720,000—assuming, of course, that the gasoline supply does not give out and that no other means of transportation supersedes the automobile.

If such an accumulation of vehicles were dumped into our already overburdened streets the result would be complete paralysis. Furthermore, we may as well make up our minds that unless we limit the number of vehicles in use a complete solution of the problem of street congestion is probably impossible. Our task is to get the most use we can out of the vehicles and out of the streets. We are far from doing that now, and without heroic efforts and far-sighted planning we or our children will be still further from doing it in 1965.

But there are some causes of difficulty which, as we shall see later, can be removed, or, if not eliminated in the city-building we have already done, avoided in the future. These include streets too narrow for the buildings which front on them, or, as it might better be phrased, buildings too high or too bulky for the streets they front on, an insufficient number of main thoroughfares, "bottle necks" where traffic jams up, and, above all, the lack of a comprehensive plan by which there can be a sensible relation between the traffic ways of the Region and the functions which the different parts of the Region serve. It is not necessary to argue that street congestion is a bad thing. Anyone who has ever tried to drive a car or even cross a street in an overcrowded part of the city knows that it is. But we can realize the size of the problem when we learn that the cost of congestion on Manhattan Island is probably more than $500,000 a day, and in the Region probably more than $1,000,000 a day.

Congestion is not a matter affecting Manhattan Island alone. Its causes as well as its effects reach out to the limits of the Region, and even beyond. Manhattan, however, furnishes some of its most striking as well as most familiar illustrations. Manhattan, south of Fifty-ninth Street, is the focus toward which the traffic of the Region is drawn, like filings toward a magnet. In 1924, when careful counts were made, 204,750 vehicles entered this area on an average business day. Since then the number has increased, but we may assume that the proportions coming from the different directions have remained very nearly the same. Two possible exceptions may be noted. The completion of the Holland vehicular tunnels between Manhattan and New Jersey has probably increased the flow in that direction. The One Hundred and Seventy-eighth Street bridge will doubtless have a similar effect upon traffic across the Hudson at that point. But at the time of the count 64.9 per cent of the traffic into lower Manhattan came from the north, 27.1 per cent came from Brooklyn and Queens, 7.4 per cent came from New Jersey, and 0.6 per cent came from Staten Island.

It is part of the definition of a vehicle that it shall be movable. That is why it has wheels and motive power. But an airplane map of Manhattan, made in 1921, showed that of all the vehicles on the island, including the 62 per cent in the district south of Fifty-ninth Street, only 40 per cent were in motion. The others were either parked or held up because they were unable to proceed. The percentage of moving vehicles at any given time certainly has not increased since 1921. It has probably decreased. We can now understand why the average speed of vehicles on the island had decreased, at the time these observations were made, to about 11.3 miles an hour, and on Fifth Avenue during the crowded hours had fallen as low as 3 miles an hour. Since then these speeds have beyond any doubt still further diminished. The automobile seems to have defeated its own purposes. On many streets it cannot move much faster than its predecessor the horse.

If we regard a street as a container into which traffic is poured we observe that it is like any other container—it will hold just so much and no more. But the actions of an automobile in a street are not quite like those of a drop of water in a pipe. There must be proper spacing between automobiles if accidents are to be avoided, and on all the main highways of our Region, except those which may be constructed as "express highways," there must be periodical stops in order to allow traffic to move on intersecting roads. On crowded streets what we may call the saturation point is soon reached, whether these are in the heart of Manhattan, or on Long Island, or in Newark. We can estimate with reasonable accuracy what this saturation point is, for instance, on Fifth Avenue. With traffic running north and south for 120 seconds, east and west for 50 seconds, and halted for 10 seconds in each three minutes the avenue can, theoretically, carry 1,150 vehicles an hour north and south on each of its four moving lanes and 450 an hour could cross the avenue on each moving lane of east-and-west streets. In practice the average is about two-thirds of this total. The avenue is never completely saturated with traffic, since there is never an uptown and a downtown rush at the same time. But the perfect street would hold all the traffic that might be sent into it at the rush hour, just as a well-built bridge will stand up under a much greater strain that it is expected to meet.

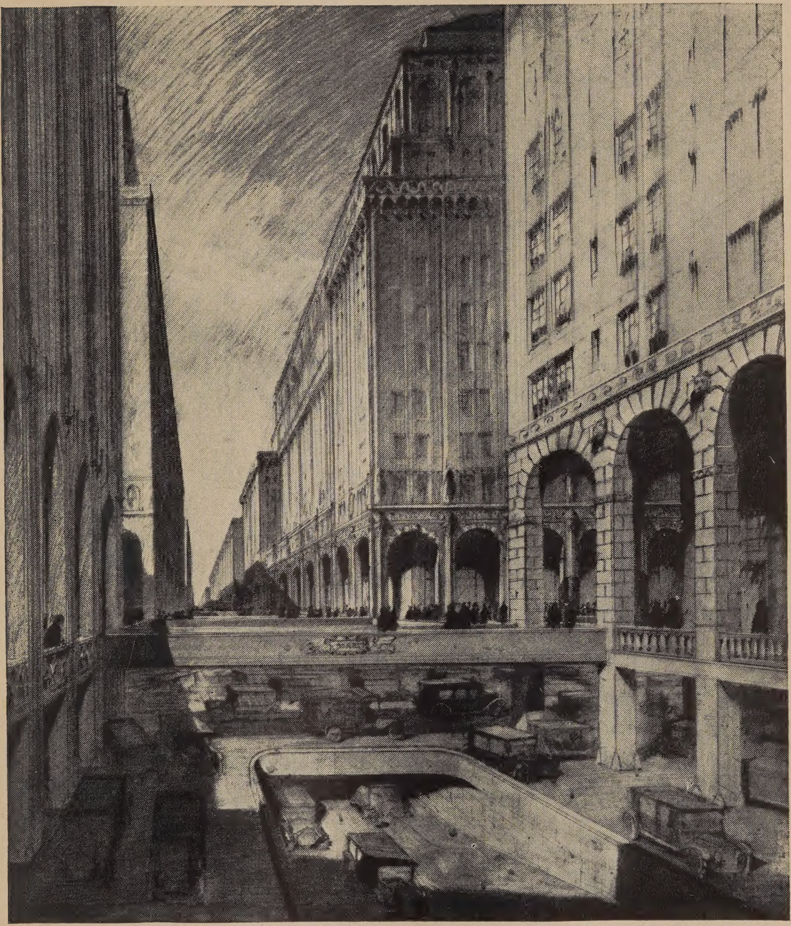
The current of traffic rises and falls hourly, daily, and seasonally. On most of the avenues of Manhattan, as well as elsewhere in the Region, it reaches its high tide at about five o'clock in the afternoon. On Sundays truck traffic and traffic in business streets naturally falls off and there is a great increase in traffic over ferries, bridges, and all arteries leading to and from the country districts favored by the holiday motorist. At some points this may be double or more than double the daily average. The seasonal variation is striking in the outlying parts of the Region, where there is much pleasure driving, and less in the congested areas. In parts of Connecticut there are ten times as many cars on the road in August as in February. The ferry between Perth Amboy and Tottenville, when a count was made some years ago, carried about five and a half times as many cars in August as in February. But as a highway cannot be rolled up and put away in moth balls for the winter its capacity should be adapted to the maximum demand upon it.

In addition to these rises and falls in the traffic tide there is the steady increase which we have already noticed. If we draw lines on a map of the Region to represent the numbers of automobiles following the main routes out of the city, toward Bridgeport, Peekskill, Long Island, southern New Jersey, and other points we find them still rather slender and graceful, like the upper branches of a tree. If we project similar lines according to the estimated burdens these routes will have to bear in 1965 we have something representing a mass of gnarled and twisted lower limbs. The flow of automobiles in and out of New York a generation hence may be as much as six or seven times what it is now, though naturally the increase will be greater in some directions than in others.

This load cannot be carried on the existing highways and streets, unless we tunnel under them or rear multiple decks above them. To carry it at all the whole Region must be as well organized as a great railway system. Especially will we have to avoid the fatal error of spoiling the usefulness of a broad highway by letting it run into a bottle-neck. A highway is just as wide as its narrowest point, whether that point be created by a truck backed into the street to unload or by an actual narrowing of the right of way. We shall come back to this subject later on.

The problem of passenger transportation is in many ways similar to that of traffic. There is the same situation of many more people wanting to go to certain places at certain times than can comfortably be carried there. There is the same rapid increase in numbers. The number of passengers carried in and out of New York by the railroads doubled between 1911 and 1924, and at present is considerably more than twice the population of the United States. Travel on the New York City rapid-transit lines has multiplied itself nearly seven times between 1900 and 1924 and is now around the two-billion mark. In the light of these statistics the subway crush is not hard to understand.

One serious difficulty in the development of rapid-transit facilities around New York has been the pres-



Advisory Committee of Architects, Harvey W. Corbett, Chairman

ONE PROPOSED SOLUTION FOR THE TRAFFIC PROBLEM

In some of the centers that are already congested, it will probably be necessary to provide a separate level for pedestrians, with grade separations of vehicular ways at street intersections (See page 253)

ence of natural barriers. These held back the movement to Brooklyn, Queens, and Long Island until bridges and tunnels were built. They have held back the spread of population into New Jersey for a much longer time. Because of the relative difficulty of getting from Manhattan to New Jersey, and the relative ease of getting from Manhattan to Long Island and The Bronx, the part of the Region in New York State within 20 miles of New York City Hall has three times as large a population, on a smaller land area, as is found in the New Jersey part of the Region within the same distance. This situation is being altered by the vehicular tubes and will be affected by the One Hundred and Seventy-eighth Street bridge. But obviously it has made the pressure upon the transit lines running north and east from Manhattan Island greater than it would otherwise have been.

The passenger transportation system throughout the Region is legally as well as physically complicated. In New York City proper there are about 1,000 transportation franchises which are owned by about 200 operating companies. Most of these, however, are for surface lines and represent a system of passenger transportation which is going out of date. Between 1923 and 1928 the total number of passengers carried on street cars in Manhattan dropped from 376,595,381 to 300,545,220. The surface car has a greater hold on life in the less thickly settled districts, where it is not so much impeded by traffic. Even there, however, it is often replaced by the motor bus. Both buses and surface cars are important nowadays chiefly for short hauls and as feeders to rapid-transit lines. In newly-developed districts on the outskirts of the city they fill in the spaces between the rapid-transit routes. But nearly two-thirds of the metropolitan transit is by subway and elevated. Without them New York City would be paralyzed. A tie-up of a single day would be a calamity.

The story of rapid transit in New York—for the coaches and horse cars of an earlier day could hardly be called rapid—goes back to 1871, when the first elevated railway, running from the Battery along Greenwich Street and Ninth Avenue to Thirty-first Street, was placed in operation. By 1880 there were about 80 miles of this type of railway track in Manhattan. The Sea Beach line in Brooklyn was opened in 1879, with about 11 miles of track. There was much building of new lines in Brooklyn during the 'eighties. In 1888 the Second Avenue line extended its tracks from Manhattan to The Bronx, thus giving that now populous borough its first rapid transit outlet.

All these operations were by steam. Subway construction began with the turn of the century, in Manhattan, Brooklyn, and The Bronx. The first subway, running from Ann Street to One Hundred and Forty-fifth Street and Broadway, was opened in 1904. By 1909 about 100 miles of track were in operation.

By 1925 the subways and elevated lines together were operating about 600 miles. At the same time the number of riders had grown so rapidly that the facilities during the rush hours were wholly inadequate. The crowding on the New York subways had become and still remains one of the most distressing and degrading features of metropolitan life. The nature of the rush-hour problem is indicated by the fact that at given stations the traffic at that period may be from two to six times the average hourly traffic of the twenty-four-hour period.

Of the persons entering Manhattan Island on a typical business day—there are considerably more than two million of them—52.8 per cent come from Brooklyn and Queens, 29.8 per cent from the north, 15.6 per cent from New Jersey and a corporal's guard of 1.8 per cent from Staten Island. We may note that 82.6 per cent of the whole is from territory east of the Hudson River, a fact which indicates how great a rôle New Jersey will have to play when the whole Region is evenly developed. Of the total number entering Manhattan daily, 6.1 per cent come in by the railroads, 9.3 per cent in surface cars, 21.6 per cent by ferry, or across highway bridges by motor vehicles or as pedestrians, and 63 per cent by rapid transit. If we make a little map of Manhattan and indicate by black patches the size of the contribution by each rapid-transit system and from each direction we observe that the Brooklyn-Manhattan Transit Corporation—familiarly known as the B.-M. T.—

divides the traffic from the east and north almost equally with the two branches of the Interborough, with the Hudson Tubes a poor third.

But from whatever source, it flows into and congests all of the middle area of Manhattan from Central Park south. The principal point of concentration is south of Fulton Street. Here, in a district of 245 acres, with 118 acres of building area, there are 20 rapid-transit stations, all crowded at the rush hours. Incidentally we may realize the possibilities of future congestion if we bear in mind that the average building height in this section, imposing though its tall edifices are, is only about eight stories. There is room for many more buildings and much higher ones than could be supplied by two or three times the present rapid-transit facilities. Yet anyone who wishes is free to erect a new skyscraper, or as many new skyscrapers as he can pay for. He may put up an office building which will house 15,000 workers—or enough to absorb the entire capacity of a two-track subway in one direction for 20 minutes. If every landowner did this it would be impossible to build enough subways. Where is the line to be drawn? This is one of the dilemmas which make city planning difficult. In the uptown district there is a similar congested spot at Times Square and another at the Grand Central Station.

If the population continues to increase in the ratio expected, and if its riding habits remain about what they are at present, the year 1965 will witness a passenger flow four or five times what it is now, or nearly 6,000,000,000, in and out of Manhattan Island. This will be about the same as though every man, woman, and child now living in the United States visited the city once every week. Mr. Daniel L. Turner has estimated that to keep up with the increase of travel in the subways alone the city will have to build every five years 100 miles of single track—that is, the equivalent of a four-track subway 13 miles long, with two feeders each six miles long. To put the same thing in another way, the city will have to invest about $350 in transportation for every new inhabitant added after 1940. We could hardly find a better illustration of the danger that our city will grow top heavy if the process of concentration is carried too far.

Although the railroads carry only about 6 per cent of the persons entering Manhattan on an ordinary business day, they play a larger part than this figure would indicate. They are the city's links, not only with the commuting towns, but with the region beyond. They bring in all the long-haul freight that does not come by water. They are useful in enabling the population to spread out over a wider area.

The problem of the railroads, especially of those on which there is heavy commuter traffic, is similar to that of the rapid-transit lines, though the conditions of crowding are never so extreme. The commuter traffic on all railways entering Manhattan is doubling every nine years. Total passenger traffic, which includes the occasional visitor to the city, is doubling about once every 13 years. The two great Manhattan stations, the Pennsylvania and the Grand Central, are already overcrowded. A solution may have to be sought in new stations, in new lines, and in a new system of connections between existing lines. We shall come to this point later on, when we discuss the details of the Regional Plan.

The handling of freight presents problems similar to those involved in the handling of passenger traffic. In and around New York we must think in terms of waterways as well as of railways and highways, but the basic principles of transportation are much the same in each case. When careful studies were made of freight transportation into the New York Region and out again, several years ago, it was found that approximately 87,000,000 tons were brought in each year and about 46,000,000 carried out. This was equivalent at that time to an annual consumption of about 5.6 tons per capita—enough to explain a good deal of hauling!

Of the freight brought in, about 16 per cent is foodstuffs, about 60 per cent is fuel, and nearly 8 per cent is building materials. Nearly 90 per cent of the railroad freight to and from the Port comes in by the railroads on the New Jersey side of the Hudson. We can see, therefore, how important the Hudson River is, since a large fraction of this freight has to be floated across this water barrier.

Its destinations are interesting. As nearly as can be estimated—the statistics here are some years old, but probably approximate the actual situation—Manhattan takes or sends 32.3 per cent of all the incoming and outgoing freight in the Region, New Jersey and Staten Island handle 26.6 per cent, Long Island 21.1 per cent, and The Bronx 0.6 per cent. Finally, 19.4 per cent—almost one-fifth of the whole—is carried to and from ships. There will probably be some shifts in these proportions as the outlying portions of the Region are more intensively developed. The total amount of freight handled tends to increase, though in actual bulk not so rapidly as population. Of course it is clear that if the heavier industries move out of the crowded districts, or even out of the Region, a great many tons will be diverted. At the same time the goods actually brought in or exported may represent a much greater value.

Since 1921 the affairs of the Port have been under the Port of New York Authority, a body created by special agreement between the states of New York and New Jersey and the Federal Government. The Port Authority has a program calling for three concentric belt lines which would enable freight to be shifted easily from line to line and pier to pier, and also for an underground automatic electric system to serve Manhattan Island. Some progress has already been made in hooking up part of the belt lines, but the greater part of the project remains to be realized. Perhaps the fundamental reform will be to substitute tunnels and bridges for the slow and expensive processes involved in the transfer of railroad freight to or from lighters or carfloats in its movement through the Port. About 80 per cent is so handled at present. Much of the freight to and from steamship piers has to be carried to and from the railway terminals by lighter or by truck. By 1935 we may expect a total railroad freight movement of about 75,000,000 tons, and by 1965 a movement of about 100,000,000 tons. New York will really have to move mountains—and probably will need something more than faith to do it with.

The future of the Port holds some fascinating possibilities—for example, the development of the 24,000 acres of the Hackensack Meadows. Theoretically there is room here for industries employing 720,000 workers, who would represent a population of 5,350,000 persons. But we shall come back to all this later on, when we are ready to take a long look into the future.

Chapter Five

HOURS OF LEISURE

IN THE early days of the community recreation was a simple problem. Open spaces were plentiful and within everyone's reach. The enormous growth which was to eat up this open space was not foreseen. The worthy gentlemen who made the plan of Manhattan in 1811 believed that it was "improbable that for centuries to come the grounds north of the Haerlem would be covered with houses" and thought that since Manhattan was "embraced by large arms of the sea" it would be unnecessary to leave much room for parks. Mayor Jacob A. Westervelt will be ungratefully remembered for having opposed the segregation of land for Central Park in 1854. He also opposed, more successfully, a proposal to lay out a park on the East River from Sixty-sixth to Seventy-fifth streets, observing that one park was enough.

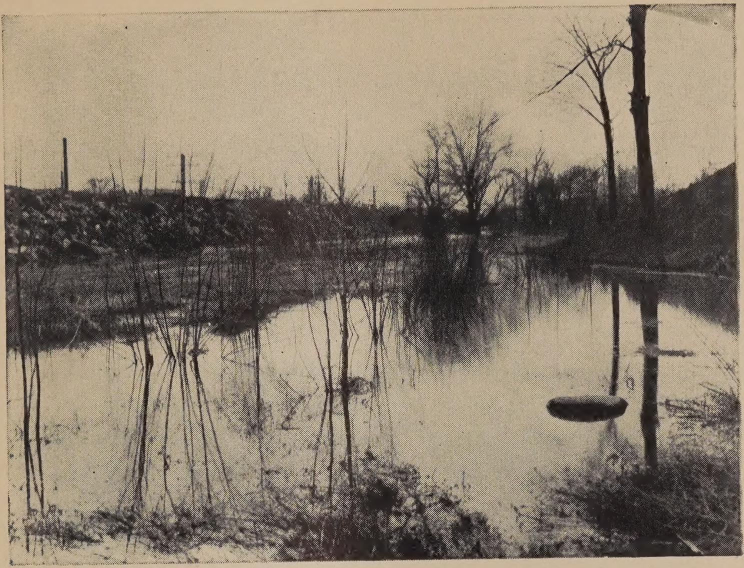
A New York newspaper in 1857 was of the opinion that "that great Central Park which has cost so much money will be nothing but a huge beer garden for the lowest denizens of the city." When the Bronx parks were purchased, a generation later, there was an outcry against the expense involved. It was not successful in this case, nor in the case of Prospect Park in Brooklyn. Yet it represents an attitude which has left New York tenth among the largest ten cities of the United States in the amount of park space per capita of population, and fifth in the percentage of park space to total area. There are still in Greater New York more than 80,000 acres—eight times the area of open space dedicated to parks—which are not yet built upon. The sum of it all is that so far as public provision for recreation is concerned New Yorkers are still far from being as well off as they might be, or as the inhabitants of most other large American cities already are. The motion-picture industry does far more to fill in their leisure than does their municipal government.

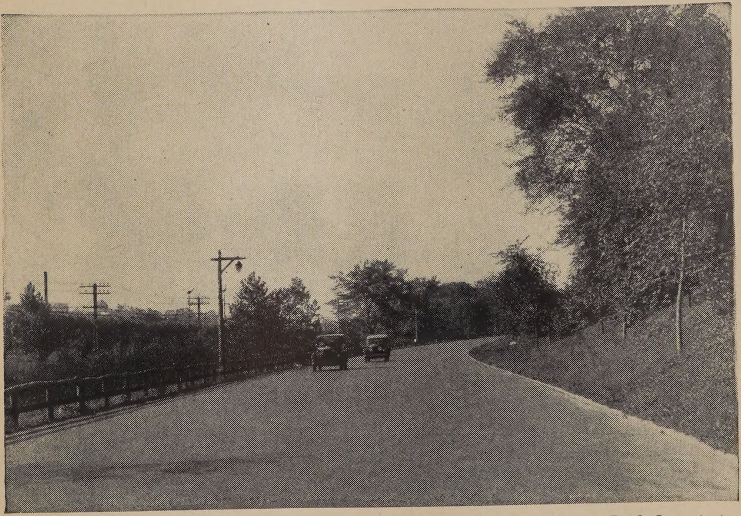
Parks may range all the way from the neighborhood square to great forest reserves like that which centers about Bear Mountain. The smaller parks are perhaps the most essential, since they give breathing space for a densely crowded population which has neither time nor money to get to the larger open spaces. New York City is painfully deficient in small parks and playgrounds. It is difficult to supply them in the places where they are most needed, for there the land values are likely to be highest. But this situation points the way toward better park policies in undeveloped districts. The time to set aside open space is obviously when open space can be had at a bargain. This opportunity, which was seized when Central Park, Bronx Park, and Prospect Park were bought, was lost when the city neglected to obtain land in Queens before the opening of the Queensboro Bridge sent prices kiting. But there are still spaces in Queens, Richmond, and Brooklyn which might be taken over without excessive expense. Following the park problem further out we see that there may be need for the protection, improvement, and extension of the Palisades Interstate Park, and for setting aside and protecting from contamination additional sea beaches.

To be all that it ought to be a park system must be built into the city's physical and social pattern. It must help provide recreation for all ages, for all classes, for the intermissions of daily work and for the more extended holidays. If the more distant parks are to be usable by large numbers, thought has to be given to means of transportation. Still more important, in an ideal regional plan, would be to group population and locate parks in such a way that less traveling would be necessary. Parkways leading from one park to another would be an essential part of such a plan. But in any case any ideal design for a city must in these days of congestion and automobile traffic include more play space than ever before. For children the need is especially acute. The street is the traditional playground of the city child. It was never a wholesome playground, and with the increase in traffic it has become shockingly dangerous. Yet children cannot be prevented from playing in the street if other play spaces are not provided for them.

Now let us look more closely at our existing park facilities, at the possibilities for their extension, and at the problem of recreation in general—by which we will mean chiefly outdoor recreation. New York City as a whole has about 5.5 per cent of its area in park lands, or something less than one acre for each 600 of population. In Manhattan, largely because of Central Park, nearly one-eighth of the area is in parks, but because of the great density of population there are over 1,200 inhabitants to each acre of open space. Moreover, the park lands are not so distributed as to be readily accessible to everyone. The Bronx, with 16.8 per cent of its total area in parks, or one acre for about 200 inhabitants, is far better off. Bronx Park, Pelham Bay Park, and Van Cortlandt Park of course draw many thousands from Manhattan. Queens, with a rapidly growing population, has an acre of park for approximately every 500 of its residents. Richmond has but little park area, but there is still much land which could be had at prices which are low compared with those in the other boroughs.

Westchester County, outside New York City but inside the Region, had in 1927 5.6 per cent of its area in parks, or about one acre for each 28 inhabitants. The total length of its parkways, actual and projected, was about 140 miles, and nearly $40,000,000 had been spent in buying and improving land.





Courtesy, Westchester County Park Commission

BRONX RIVER PARKWAY

It is not surprising that land values would be affected favorably by such an improvement as these pictures indicate. The upper picture was taken at a point near Mount Vernon before improvement; the lower picture is the same view after the parkway was constructed

The Bronx River Parkway, familiar to every motorist, is a fine example of what can be done. This parkway has encouraged developments which are really an extension of New York City, running far into what had been open country. Essex County, New Jersey, has nearly 5 per cent of its area in parks, and Hudson and Union Counties have greatly extended their park areas in recent years. In a sense most of these park developments cost the community less than nothing, since the increase in land values more than offsets the expense of purchasing and improving. It was found, for example, that the growth in values of land fronting on four Newark parks above what it would have been if the parks had not been constructed, was sufficient to pay for all the parks in the county almost two and one-half times. We must not, of course, make the mistake of thinking that such gains go into the pockets of the community at large. Sometimes they are merely a source of profit to private landowners. But they do show, in a most tangible way, how important breathing spaces in a city are. And we cannot measure in dollars what grass, trees, shrubbery, and unbroken sunlight can mean to the people living in a congested district.

Nevertheless, as we have seen, New York City has lagged behind other large communities in park provision. The same is true of the New York Region, of which New York City is a relatively small part. If we look at the park and recreation areas around

Chicago, Boston, Berlin, London, and Paris we find them in every instance more extensive than our own. This is in spite of the fact that some of the most superb territory for hiking and camping to be found anywhere in the world is within easy reach of New York. The Palisades Interstate Park, the district around Mount Beacon, opposite Newburgh, and the Tri-State Park, where New York, Massachusetts, and Connecticut meet, are in their way almost perfect. In many other parts of the Region there are forests, lakes, streams, and abandoned canals where hikers and motorists may find their paradise. In summer they are used—and sometimes, unhappily, abused—by tens of thousands of city people. In addition the Region has a salt-water frontage of about 1,800 miles, a small part already in use under public or private control, a considerable portion devoted to, or suitable for, industry and shipping, but a very large fraction still capable of being developed for purposes of recreation.

As we have seen, we cannot be quite so hopeful of extending the play and recreation spaces within the congested areas. We cannot lay out any more large parks on Manhattan. The smaller parks and playgrounds offer more opportunities. A playground, strictly speaking, is a plot of not more than two acres, usually limited to the use of children under fifteen years of age. Experience shows that playgrounds draw children from about a quarter of a mile in each direction. If every child were to have the chance to play to which he or she is entitled there would have to be four playgrounds for every square mile of the crowded area. The name playfield is usually given to larger grounds, intended for older boys and girls, and suitable for such games as baseball, cricket, football, volley ball, and tennis. These must be larger than playgrounds, but there need not be so many of them. Then come the athletic fields, often constructed in connection with the larger parks or with school grounds. Finally there are the neighborhood parks, which may have an area set apart for children's play.

No competent city planner would lay out a community nowadays without arranging for all these uses of open space. They can be added to, as they have been in some cases, by opening up the back yards of a group of apartments or tenements. New York City has not been farsighted enough to preserve much of its waterfront in the congested sections, and the waters of both the East and Hudson rivers are too much contaminated with sewage to be safe for bathing purposes, except possibly in certain portions of the New Jersey side of the Hudson. Some beaches farther out have had to be condemned on this account. The accessible ones which are still considered safe are often seriously overcrowded. As many as 200,000 people have gone in swimming at Coney Island in a single day. Assuming that one-third of these were on the beach at a given time, there were more than four bathers for every front foot of water.

We are a little too apt to assume that such crowding is unavoidable in our recreation places, as it seems to be in our streets and subways. But by this time it should begin to be evident that the worst crowding in a great city is not so much due to a lack of sufficient space as to a misuse of space. If a city lacks adequate provision for rest and play for all classes and ages of its population, then we may safely say that some of its land which might be employed for these purposes is being wasted on less valuable ones. We have seen that certain private enterprises, notably banking and retail trade, can outbid all others for the use of the sites they need. If social values were weighed as heavily as economic values the same thing would be true of the public enterprise of recreation. Theoretically there is something to be said for the proposal which has been made that a portion of every third block in Manhattan be condemned, cleared of buildings, and developed as a park or playground, though practically, as has been said, the enormous expense of such a plan makes it well-nigh impossible. But we can set up standards and do our best to work toward them.

Experience has shown fairly accurately what those standards must be. We can say definitely that every child in the city should have set apart for it at least 25 square feet of playground within not more than a quarter-mile of its home, that every young person between twelve and twenty-four years of age should have 50 square feet available in an athletic field or playfield, that there should be an acre of neighborhood park for each three to five thousand inhabitants, and that there should be one foot frontage on a bathing beach for every one of the persons likely to care to use it at a given time. If a city cannot provide this much it is to that extent failing as a community. Unhappily, this is already true of the more congested districts of New York City. The fact has to be faced. It is one of the penalties of concentration, coupled with a failure to foresee and prepare for the future. It can be made up for, in part, by a more intensive use of the facilities we have, and by improvements in traffic and transit conditions which will enable our population more easily to reach the outer zones.

But this defect of the city we have already built can at least teach us to avoid similar defects in the one that is day by day being built. If there are relatively undeveloped districts which will sometime have as dense a population as Manhattan now has we must see to it that they have at least twice as much play space as now exists on Manhattan. Like nearly every other wise step in city planning, this one would cost but little if undertaken in time. We have seen that parks and playgrounds usually send real-estate values up. Conversely, the most run-down sections of Manhattan are those in which there are the fewest open spaces. When a city sets aside land for public use it does not thereby reduce the area that will be used for building sites within its boundaries. It merely spreads the built-up areas more smoothly. For every acre left vacant in the congested districts, an acre that otherwise might have remained undeveloped will be built upon farther out.

We shall discuss some specific proposals later on. Meanwhile let us bear in mind that facilities for recreation are not a luxury nor a beautiful expression of sentiment. They are a part of a normal healthy life. They are as necessary, for all ages, as earning a living. Of course we must include under the head of recreation that great variety of amusements which is provided by private enterprise, foremost among them the motion-picture theater. New York is a far more interesting place for its inhabitants than it used to be 25, 50, or 75 years ago. Its amusements have become cheaper in proportion to the average income and probably also more wholesome. But private enterprise leaves untouched a wide field of recreation which it is, and will always continue to be, the business of the community to provide. The glamour of the Broadway theater, of art galleries, museums, and concert halls, of libraries and majestic avenues, is a tawdry thing indeed if children have to play in the streets and old people have no spot of trees and turf where they may sit and rest on summer evenings.

Chapter Six

HOW WE ARE HOUSED

IN AN earlier chapter we have seen something of what happened when the city's population grew more rapidly than decent housing could be—or at least was—provided for it. There may never have been a time when New York's housing was, according to the best modern standards, adequate. There has frequently been room enough, if every den and hovel were counted, but that is a different matter. In the city's early history the very difficulty of transportation made it impossible for very many of the population to live far from their work. As stage-coaches, steam railways, horse cars, electric surface cars, elevated railways, and finally subways were placed in regular use, the residential area was extended and the commuter came into being. But the conveniences that enabled people to get away from the center of the city easily also enabled them to get into it easily. In consequence, the price of land climbed rapidly, with occasional local or temporary set-backs. Of a given amount paid for rent a larger proportion went into renting the land and a smaller into renting the structure built upon the land. In a city where poverty-stricken immigrants were accumulating at the rate of many thousands every year this naturally made for bad and expensive housing. Our transit problem comes in part from the desire of many individuals who work in Manhattan to escape from their former poor quarters into better ones in Brooklyn or The Bronx. Or we might call the subway a kind of traveling housing problem.

Let us look at the crowded centers first. We find that there is always going on, and probably always has been going on since the city was first really a city, a peculiar hand-me-down process. New houses and apartments are ordinarily built for the better-off classes of the community, since they are the ones who can pay for them. As these grow a little shabby the price of living in them drops and a group a little lower in the economic scale moves in. In this way they may be passed along down until what was once a magnificent residence or district of fine residences becomes part of a slum. Finally, as everyone moves up a step, no tenants at all can be found for the poorer houses, they reach a point where they are worth less than nothing, and they are torn down. Sometimes there is an intervening stage in which they are used for light industry of one kind or another. Sometimes, as in certain parts of Manhattan during the past few years, an old district which has run down "comes back."

The story of New York housing in the period since the World War has been one of a severe housing shortage, which has been gradually relieved; of a considerable migration from the congested areas to the suburbs; of a decline in the number of one-family houses in the center and an increase in several of the outlying regions; and of a decline everywhere in the number of rooms used by the average family. Incidentally there seems also to have been a decrease in the size of the average family. All this reflects a great social change. The movement of many East Side families to The Bronx is probably a sign of greater prosperity and of rising standards of taste and comfort. The multiplication of one-family houses in the suburbs seems to prove that the American home is not quite obsolete. There seems to be a tendency for inhabitants of the New York Region to sort themselves out according to age, marital state, number of children, and personal temperament. Unmarried persons, married persons without children, and some older individuals who no longer have to care for their children, tend toward the congested districts, which they find exciting or convenient. The normal family, particularly among the "white-collar" groups, drifts toward the suburbs. We find in consequence that there is an actual decrease in the nighttime population of Manhattan Island, though the daytime population is steadily growing.

In 1913 there were 25,211 old-fashioned one-family dwellings in Manhattan. Last year this number had probably dropped to about 19,000. In Brooklyn, between 1913 and 1927, the number of such dwellings increased from 61,603 to 92,481; in The

Bronx from 13,540 to 21,210; in Queens from 33,405 to 101,678; in Richmond from 13,725 to 26,741. Hotels and elevator apartment houses increased considerably on Manhattan Island. They also increased in Brooklyn and The Bronx, though as these two boroughs combined had less than one-fifth the number on Manhattan, the growth there was not so important. In Queens and Richmond, according to the assessment rolls, there was an actual falling-off. If we go farther out into the suburbs we find the one-family house, often with considerable open space around it, holding its own. The suburban apartment house has made progress here and there. Yet many families probably use it as a halfway place on their way from apartment life in the city to life as independent home-owners in the country.

Incidentally, this may be a good place to call attention again to the fact that there is plenty of room in the Region for every family which is likely ever to live here to have a separate house, front yard, and garden, should they desire it. We arrive at this conclusion by a very simple calculation. The Region includes about 3,500,000 acres, from which 25 per cent may be deducted for streets, about 10 per cent for parks, about 10 per cent for industry and about 5 per cent for business uses. This leaves 1,750,000 acres. An acre is sufficient to give 11 families each a plot 40 by 100 feet in size. Let us put the figure at ten families to the acre in order to simplify our figuring. From the available estimates of the Region's population in 1965 we have accepted that of about 20,000,000 persons, or 5,000,000 families. Consequently, if every family lived in its own house and on its own lot, only 500,000 acres would be needed. To put the same thing in another way, the Region could provide family lots for a population of about 70,000,000. It is out of the question that it will ever have to, for such a population could not be fed. Nevertheless, the fact brings out the most important and striking lesson of any study of metropolitan conditions—there is plenty of room for any conceivable population. Our difficulties come from our failure to make efficient use of the abundant space at our disposal. Nature does not crowd us. We crowd ourselves.

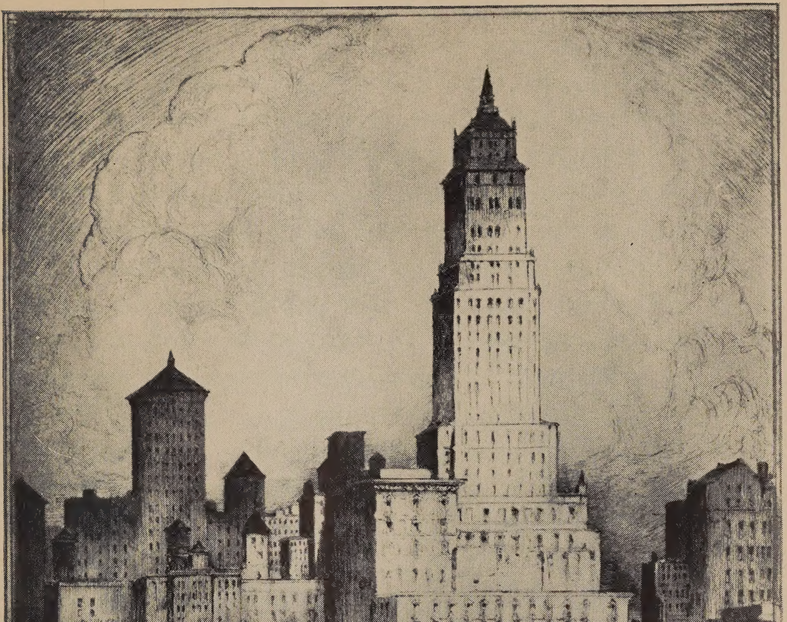
A reduction in the number of rooms used by the average family does not always, though it certainly does sometimes, mean that we are being crowded. It may mean that we are learning how to live in a simpler way, and that many of the operations formerly carried on at home are being carried on outside. At any rate, nearly everyone, not counting the very poor who have always had less space than they needed, is now seemingly satisfied with less floor space than used to be demanded by persons of a corresponding income. This is as true of houses in the suburbs as it is of apartments in the heart of the city. Take the apartments first. The average size of apartments in buildings erected in 1912 was 4.15 rooms. Next year it was a little more. Then it began to drop. By 1928 it had fallen to 3.34. The most remarkable increase was in the number of three-room apartments, of which 5,346 were built in 1912 and 39,849 in 1928. The number of two-room apartments built went up from 1,066 to 7,261, that of one-room apartments from 100 to 888. The construction of four-room apartments increased about 50 per cent, that of five-room apartments fell off about one-third, the building of six-room apartments remained constant, and there was a slight decrease in the rate at which seven- and eight-room apartments were being built.

If we can bear in mind that such figures as these are really fragments of biography they will not lack interest. They tell a story of steam laundries, delicatessen stores, greater dependence on restaurants, the falling off in the number of children in the average family, the greater freedom allowed children and young people, the growing numbers of "housewives" who find employment outside the home, the countless devices that make it possible to live with comfort in a compact space. The parlor disappeared long ago from city apartments. The guest-room has followed it. The living-room and dining-room are often merged, or the dining-room shrinks into a dining-alcove opening off the kitchen. Sometimes the kitchen itself dwindles to a mere closet. This tendency is not confined to New York, but it is exaggerated by the conditions prevailing in the city's central districts.

We must distinguish, of course, between the small apartment which is a matter of choice or convenience and the flat where crowding passes the limits of health and decency. No one knows exactly what those limits are, but we can take the estimated minimum of one person to a room for apartments of four rooms or less, and a fraction less than one person a room for the larger apartments, as being reasonable. This is a standard to which a large fraction of New York City's housing has never attained. When Governor Smith's Reconstruction Commission investigated 26 congested blocks in 1920 it found numerous cases of 13 persons living in four rooms, 12 persons in from four to six rooms, 11 persons in four to eight rooms, 10 persons in three to six rooms, and so on. Three years later a New York newspaper reported cases of as many as thirteen persons living in two rooms, of crowded sleeping-rooms without windows, of six children sleeping in one bed, and others equally startling.

These conditions were closely associated with what are known as the "old-law tenements"—that is, tenement houses erected prior to the housing laws of 1901. The number of flats in these houses has been decreasing for more than two decades, but there are still more than 350,000 of them in Manhattan alone. Some of them, of course, are fairly satisfactory places of residence, though they could not be erected exactly as they stand under existing laws. But they include the lowest depths of metropolitan housing—miserable rookeries where no one would live if he could find other shelter. When the housing shortage was at its most acute point in 1920 practically all of them were occupied. Since then, even with a steady reduction in their number, there has been an increase in vacancies. During 1928, buildings in which there were more than 7,000 old-law tenements were torn down—encouraging evidence that housing standards at the bottom of the economic scale were improving.

Movements of the population and changes in a district from residential to other uses of course have an effect on housing. The population of the lower East Side actually decreased from 542,000 in 1910 to 416,000 in 1920, largely as a result of the effort of the inhabitants to get away from bad housing. On the lower West Side, in the shadow of Wall Street's towering roofs, there is a dying residential district, mostly lived in by families whose wage-earners work as janitors and in similar capacities in the great office buildings. The region around the new Madison Square Garden, on West Fiftieth Street, is rapidly losing its residential character. On the upper East Side a high-class residential development is in many places crowding out the cheaper tenements. Other similar instances could be cited. It has been predicted that in the long run the poorer residents will be crowded off Manhattan altogether, leaving its residential districts for hotels and high-priced apartments. This might not be a calamity if



Drawn by Louis Weirter

TRANSITION

Conditions and problems are constantly changing as the old brownstone houses give way to modern skyscrapers

it led to the development of newer and better moderate-priced housing farther out. Yet it would bring in its train new transportation problems, so closely are the different strands of city life tied together.

Housing congestion is, of course, as much a matter of rentals as of actual floor space. No one benefits by the existence of houses and apartments which he has no money to pay for. The worst of the old-law tenements were lived in during the housing shortage because the rents for the better type of dwellings were forced up to unprecedented heights. Between 1918 and 1921 rents paid by the vast majority of New Yorkers went up between 165 and 180 per cent—in many cases, it is certain, much more. Not only was worse housing put up with, but a greater proportion of the family income had to be devoted to rent, leaving that much less for other necessities and comforts. Though rents have since declined somewhat, New Yorkers still spend a high percentage of their income to keep a roof over their heads, and the lower the income the higher, as a rule, is the percentage. According to calculations made in 1926, which may still be taken as representative, the average for incomes under $2,500 a year is a little more than 19 per cent, for incomes between $2,500 and $5,000 a little more than 15 per cent, and for incomes over $5,000 about 14 per cent. That is, a wage-earner in the lower group must work nearly a week out of each month in order to pay the landlord alone, with the butcher, the grocer, the milkman and others still to be provided for.

In recent years there has been a tendency to escape this charge, or rather to change its nature, by buying instead of renting. Every New Yorker is familiar with the coöperative apartment system—or rather systems, for there are several variations of this plan. In 1920 more than 86 per cent of all the homes and apartments in New York City were rented. Since then there has certainly been a decrease in this figure. It is doubtful, however, if this movement has as yet seriously altered the renting habit of the great mass of New Yorkers. Most of the coöperatives are in buildings still too expensive for the average man.

For examples of home ownership we have to turn to the suburban districts. Statistics here are not easy to bring up to date, but there are a number of signs that more and more the commuter in the New York Region is taking title to the house in which he lives. Between 1900 and 1920 the percentage of owned homes in the Region outside New York City went up from a little over 33 to 36. At the same time the percentage of homes owned free of mortgage decreased considerably, and both before and since 1920 the business done by building and loan companies has grown at a rapid rate. The inference is that the suburban New Yorker either cannot or will not live in other people's houses, and that he is no longer afraid of going into debt to secure a house that he can at least call his own. The mortgage is no longer used merely for the plot of a melodrama. It is the sign of a very practical, every-day transaction, which very seldom brings anyone's gray hairs in sorrow to the grave or demands the return of a long-lost son in order to prevent the aged parents from being thrown out into the storm.

In a sense, of course, buying a house on a mortgage, with long-time payments, is very much like renting. In another sense it is quite different, for it means that the purchaser is betting on the continued prosperity and desirability of the community in which he has cast his lot. For good or ill, it makes for stability—for a population that will stay put. But the contrast between the city and the suburbs in this respect emphasizes the great divergence in temperament and in ways of living that we have inside our New York Region. Yet the tenement dweller and the commuter are members of the same great community, and each has an interest in the correct solution of the major problems to which housing is the key.

We have noted that the size of the average city apartment has been diminishing. The same tendency may be observed in any suburban town. A generation ago it was common to find houses of eight, ten, and even twelve rooms with only one bath. A generation before that, incidentally, it was just as common to find houses of the same size with no bath at all, except such as was provided by the portable tub. Today the heavy demand is for houses of five, six, and seven rooms with one or more baths, while houses of eight, nine, and ten rooms are less desired. Suburbanites, like those in the city, live far more simply than they used to, spend more time away from home, and rely more upon the services of the steam laundry, the delicatessen store, the restaurant, and, in the case of a limited class, the country club. The maid or hired girl is less common than she used to be. Some of the money that used to be spent upon her wages or upon the maintenance of a larger house has gone into the purchase and upkeep of a motor car. The motor car has made a garage a necessary part of almost every suburban house, and the garage, in turn, has been coupled with a driveway space between houses. The demand for lots in developing suburban communities is now for a 40 foot or even a 50 foot frontage, in place of the 25 front feet that used to be fairly common.

The result is that such communities tend to spread out more than they would have two or three decades ago. The motor car, though it has caused congestion on country roads as well as in city streets, has greatly added to the usability of suburban acreage. The modern New York Region commuter is more anxious for an agreeable site than he is to be within "five minutes' walk of the station." Some suburban developments within the Region are not, it is true, all that could be hoped for, from the standpoint of beauty, of safety from the fire hazard, or of space between houses.

There are also great variations in the kinds of communities which lie around New York City. To think of them as being practically all commuting towns is to make a very misleading picture. Some of them had an economically self-sufficient existence of their own long before the greater city sucked them within its sphere of influence. Some, as we have seen, are primarily industrial. These conditions naturally affect the nature of their housing and their housing problems. But in a large way the housing problem merges with all the rest of a city's problems. We always come back to the task of working out a pattern—of finding good places to live, good places to work, the best places for each particular kind of work, the best locations for our amusements and recreations, the easiest and quickest ways of getting to and from these various centers of our lives. A benevolent dictator might redesign the housing of the New York Region in such a way as to give everyone more open space, more light, and more quiet, without adding a dollar to the ultimate cost. If he did so he would inevitably lower the death rate, decrease the fire hazard, and probably raise the general standard of conduct.

It is theoretically possible to build homes for 17,500,000 families in the New York Region, on lots 40 by 100 feet and on land not needed for streets, parks, industry, commerce, or other purposes, in such a way as to have sunshine in every room. Our housing is certainly better than that of our parents and grandparents. The distinction we now draw between "old-law" and "new-law" tenements is sufficient evidence of that fact. But if the art of building houses progresses as we may expect it to, our "new-law" structures will some day appear very "old-law" indeed. Dark and poorly-ventilated rooms will come to be regarded with horror, and the city ordinances may frown as severely upon tenements which are a menace to health as they now do on bad meat or adulterated canned goods.

At any rate, the question in the New York Region will not be whether new houses and apartments will be built, but what kind of dwellings they will be and where they will be placed. If the increase in population continues at the rate which now seems most likely, a total of about 2,000,000 new suites will have to be constructed between 1930 and 1965—an average of one new suite every two and one-third working minutes. These will cost, roughly, between eight and nine billion dollars, assuming that there are no violent changes in the price levels. We have here, therefore, another illustration of what city and regional planning means. It means giving intelligent direction to tendencies which will operate whether they are directed or not. We will have a great deal of new housing of some sort. It can be better housing than this or any other city has ever known if we plan it that way. In a future chapter we shall consider some of the possibilities.

Chapter Seven

HOW OTHER CITIES HAVE BEEN PLANNED

WE HAVE now seen enough to feel sure that cities will not work well unless they are planned, any more than a machine will. The word machine is used here deliberately. We have discovered that the ideal city is not simply a pretty design laid out on a map. It is also a device for getting things done—work, so that the people will not starve; play, so that they will live a normal and well-rounded life. The nature of this problem has changed so much with the progress of invention that our ancestors' solutions are not of great value to us. But we can learn something from the way in which they did the simpler things that they had to do, before we attempt to unravel our own far harder knot.

Cities, as far back as we can trace them, seem always to have tended to grow up *around* something—a fortification, a temple, a market-place, a landing-place. Sometimes this gives their street plans an appearance of symmetry which was probably not planned at all. In ancient cities the public squares and buildings often had an impressive grandeur, while most of the inhabitants lived in dirty and congested alleys. As the common man was not considered of much importance when these cities were built, this fact was probably not regarded as a drawback. Often, however, a surprising amount of attention was paid to the layout of certain streets and quarters.

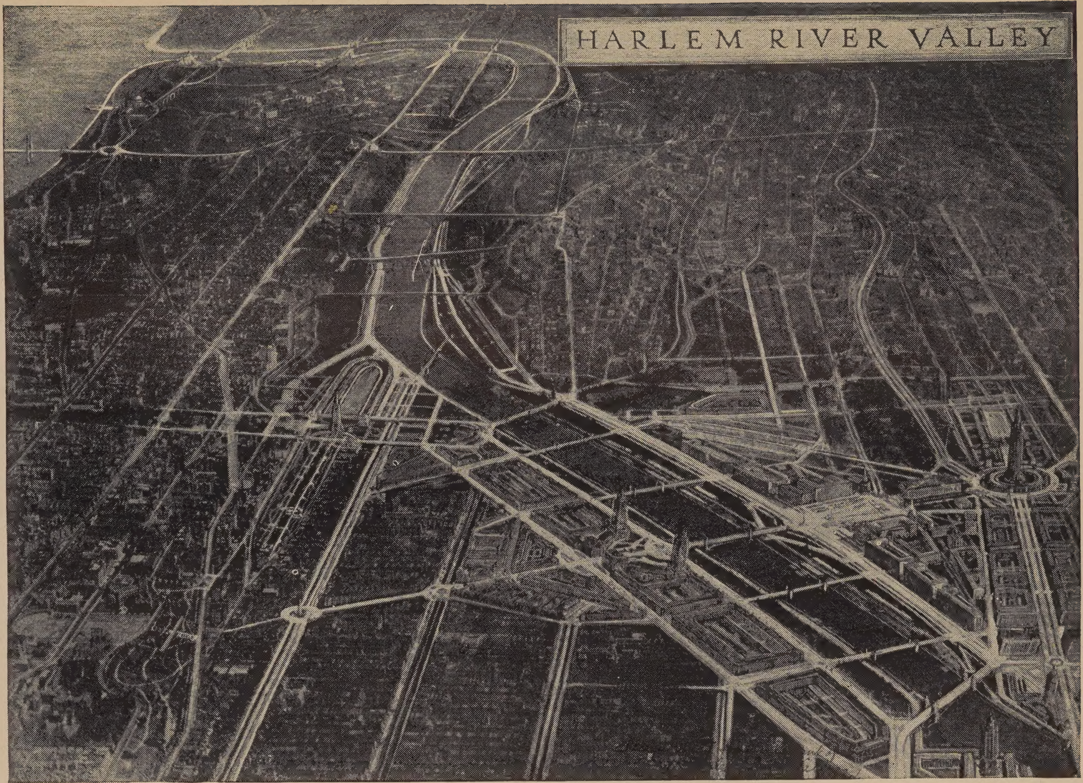
We may borrow from Raymond Unwin's *Town Planning in Practice* a few facts which will show how fascinating the subject is. The oldest *planned* town that we know anything about is the little city of Kahun, which was built for the workmen engaged in building the pyramid of Illahun. It was analogous to one of those busy settlements which now spring up around a great engineering enterprise in an undeveloped region—a mine, perhaps, or a dam. Because the pyramid took a longer time than do most modern works, the town was more solidly built than a similar community today—so solidly that after five thousand years it has been excavated and its streets and buildings mapped. On a little hill were the temples and probably the offices of the governors of the city. Below were the workmen's houses, structures of four or five rooms each, arranged in oblong blocks which on the map look very much like those of mid-Manhattan today. The roads had a drain in the center. On the whole the town was probably cleaner and more comfortable than many of our temporary settlements today.

In the fifth century B.C. there lived an architect known as Hippodamus of Miletus, who, according to Mr. J. W. Simpson, "dreamed of regular and geometric cities, preferring his theoretic plan to the tortuous mazes gradually formed by force of time, and saw therein a triumph of reasoned order over the wanton riot of Nature." Hippodamus worked out what was then the novel idea of streets crossing each other at right angles at regular intervals. The Romans carried this principle a little further, for they paid no more attention than was absolutely necessary to the natural slopes of the land. This practice has been followed in some modern American cities—San Francisco, with some streets so steep that grass grows in the center, is a good example.

The outlines of some of the old Roman towns, as Mr. Unwin says, can still be traced in English cities. Chester grew out of a Roman military camp, the outer walls of which can even now be followed. Some towns developed around castles. Others, like Hereford, were formed by the junction of roads. A man on the highway with something to sell would naturally pick a crossroads, for there he would encounter most passers-by. Towns form at crossroads for the same reason. For a long time after the great days of Rome and Greece, towns do not seem often to have been planned. Certain existing conditions—lines of old highways, old walls, river courses, market-places, drill-grounds, religious edifices—often resulted, however, in a design which looks very well on a map. But such designs had no necessary connection with the comfort and convenience of the inhabitants.

Town planning came in again after the Renaissance. There are a number of good illustrations of regularly-laid-out communities of this period, especially in Germany. Sir Christopher Wren had a glowing project for rebuilding London after the great fire of 1666. He proposed wide streets, as regular as possible, centering in "four or five piazzas," and he suggested sending out of town "all trades that use great fires or yield noisesome smells"—a thoroughly modern notion. Wren's plan, unfortunately, was not carried out. Had it been, the older parts of London would not now be quite so inconvenient for the resident or so confusing for the stranger. In more modern times we have had a number of instances of successful town planning. In Europe the best-known is the reconstruction of Paris under Napoleon III. This work was directed by Georges Haussmann, prefect of the Department of the Seine, but it was an engineer, Deschamps, who actually did it. Paris, as elaborated by M. Deschamps, is beautifully mathematical and extremely convenient. Yet the mathematical perfection imposed upon the central parts of the city has not solved Paris's problem as a growing modern city—it has merely pushed the problem further out.

In America, city planning was a favorite sport of the founders of the earlier settlements. It is a venerable tradition that the streets of Boston were laid



Regional Plan of New York *Francis S. Swales, Architect*

As the City Grows Northward the Neglected Harlem River Valley Could Be Made Equal in Beauty and Dignity to the Valley of the Seine as It Passes through Paris (See Page 252)

out along the cow paths, but we know that William Penn made a very careful plan for Philadelphia, all neatly laid out in checkerboard style, with a square at the center and four other squares at balanced intervals. The checkerboard style, though common in America, has serious disadvantages. For one thing, obviously, it always makes it necessary to go around two sides of a triangle when, with diagonal streets, only one would have been required. Philadelphia has met this difficulty in modern times by cutting several diagonal streets. The national capital at Washington gains much by its spoke-like pattern, though the city disappointed the planners by insisting upon growing in a direction opposite to that which they had expected. But the checkerboard or gridiron style of street design has been the one most commonly used in America. This fact is reflected in the words "block" and "square," which call up the picture of something uncompromisingly rectangular.

Except, however, for the pattern of the streets, which was perhaps a reaction against the narrow and winding lanes of the Old World towns from which our first settlers came, there was very little "planning" of American cities. For planning, as we have already seen, is far more than drawing lines on a map. It must provide for the work and play of the city as well as for its physical appearance. It must be dynamic rather than static. The fathers of our republic would for the most part have regarded such ambitions as we of today possess for metropolitan expansion as dangerous and deplorable. To them, as the late Walter E. Weyl put it, a city seemed "a dwelling-place of turbulent, impious, impudent mobs, of a congregation of unproductive artisans, wastrels, criminals, Sabbath-breakers. It was a blister on the social body, a tumor which absorbed the healthy juices. The city was vaguely associated with royalties, courts, armies, beggars, and tattered, insolent, rascally mobs; the country was the cradle of republican virtue and democratic simplicity."

It was not until people realized that we were to have large cities, whether we wanted them or not, that organized efforts began to be made to render them assets rather than liabilities. To have given up cities as a hopeless job after the proportion of city dwellers had risen from one in twenty, which was where it stood in the United States in 1820, to one in two and three-tenths, which was its approximate level in 1920, would have been a confession of national failure.

The city planning movement in its modern form is commonly thought of as having begun with the Chicago World's Fair of 1893. Only seventeen years had passed since the Philadelphia Centennial, which from an architectural point of view had been a monument of ugliness, but at Chicago a new spirit seemed to come into being. The name most commonly and justly associated with this transformation was that of D. H. Burnham. It was Charles Moore, one of Burnham's biographers, who wrote: "It is difficult now to realize the change that came over American architecture as the result of the World's Fair. Nor is it possible to estimate the relative values of the influences that were at work to bring about this change. From the East came men like Charles Eliot Norton, who had been preaching the gospel of the saving remnant and who saw a vision. If such things were possible in Chicago there was yet hope for a country steeped in commercialism, crude in manners, and brutal in the use of sudden wealth. He rejoiced that he had lived to see the day in his own beloved country when architect, sculptor, painter, and landscape architect could be brought together to produce results that recalled, in spirit, at least, the triumphs of the Middle Ages."

City planning, of course, involves far more than good architecture. In fact, good architecture is compatible with wretched planning. But a public which demands and appreciates good architecture is likely also to demand that the same taste and intelligence be applied to the larger task of organizing our cities. The immediate effect of the World's Fair was an improvement in the quality of America's public buildings. From this stimulus came the civic centers, of which the United States now has some superb examples. From it, too, there came Burnham's majestic "Chicago Plan," with its far-sighted preparation for the future—a plan to take a sprawling and disorderly city and make it both convenient and beautiful.

Burnham's plan has been in part realized, and there is reason to believe that with the necessary modifications which any city plan must undergo to fit it to new conditions and habits all of it will in time be realized. Burnham saw a system of broad diagonal streets, of great boulevards, of the creation of parks and parkways along the lake front, of a great civic and æsthetic center. He saw that "little plans" had "no magic to stir men's blood." He thought in terms of decades, not of months or years, in scores and even hundreds of millions of dollars rather than thousands. He held up to the city as noble an ideal as had ever been presented to the citizens of ancient Athens, of Florence, of Paris. It was, however, more than an ideal; it was the meeting of practical problems in practical ways. Burnham and his successors have shown that there is no necessary clash between beauty and utility. The well-planned city is likely to be the most convenient and the most economical as well as the most pleasing to the eye.

Other cities began to follow Chicago's example. Sometimes floods or fires, as in Dayton, Galveston, and San Francisco, caused at least a partial recognition of the need for better planning. Sometimes, as in the cases of Boston, Detroit, and Philadelphia, cities simply outgrew their old streets and boundaries and drastic steps were demanded. Today practically every city of importance in the United States has a city planning commission, or its equivalent. One may even find them in small towns, where a few years ago any kind of community planning would have been regarded as an absurd luxury. Growing communities—Los Angeles is a notable example—have begun to watch and control their own suburban developments.

Perhaps we cannot yet say that the planning of cities, or the correction of bad planning in existing cities, is a science. It has, rather, more of the experimental nature of an art. But it is almost a world-wide movement. In England a "garden city" project was launched at Letchworth in Hertfordshire in 1903 with a great deal of success, and the example set there has been widely imitated. Even before this Germany was planning the expansion of her growing cities and limiting the uses of the land in the public interest. A German practice not imitated in this country is that of buying land on the outskirts in directions in which it is expected the city will spread. Sweden, according to the late Nelson P. Lewis, was the pioneer in passing a comprehensive town planning law. In France, Belgium, and Italy attempts have been made to combine modern convenience and efficiency with the beauty resulting from the architecture and street plans of the Renaissance. Rio de Janeiro and Buenos Aires have widened streets and constructed boulevards with truly American energy. We can take it that it is characteristic of a civilized community to plan wisely for future growth and change, just as it is for a civilized family to do the same thing.

The problems of a great city like New York are, of course, much more complicated than those of smaller populations. If we could lay out a "garden city" of a desired size and area on previously uninhabited land we could do things that are no longer possible for us in our thickly settled Region. The city planners of more than a hundred years ago had such an opportunity at Washington, and the Australians have recently laid out a brand-new capital city at Canberra, on plans submitted in competition with other architects by Mr. Walter B. Griffin of Chicago. But we must take what we have and work it over. Perhaps there is a certain advantage in this limitation. Within limits a city plans itself. That is, its industries and businesses approximate to the positions in which they can do best. They make mistakes and usually have to move again and again, but gradually the framework of the community appears. The city planner can then make skillful use of natural tendencies, instead of guessing at them in advance. If he is wise he does not try to make men or cities do things that it is not natural for them to do.

Let us see how this idea took shape in the New York Region.

Chapter Eight

"MAKE NO LITTLE PLANS"

WE HAVE seen that as far back as 1811 people were talking of a "plan" for "New York City," though the city at that time consisted only of some 90,000 inhabitants huddled at the lower end of Manhattan and the "plan" was hardly more than an arrangement of streets. The committee which drew up the plan of 1811 consisted of Gouverneur Morris, Simeon DeWitt, and John Rutherford—names all worth remembering, for they did good work within the limits of their knowledge and experience. Yet they came to the conclusion quoted in an earlier chapter that it was "improbable that (for centuries to come) the grounds north of the Haerlem will be covered with houses," and because Manhattan was "embraced by large arms of the sea" they allowed for less open space than would otherwise have "consisted with the dictates of prudence." In extenuation of this apparent narrowness of vision we ought to remember that in their time modern industry had hardly been born. Great stretches of the waterfront were still open, the sailing-ships at the wharves were picturesque objects which one could view on a Sunday morning's walk with no fear of smoke and cinders, and what manufacturing there was was of a very simple nature. They could not foresee the ocean steamship, which was to bring new residents by the thousands, the railways, which were to link New York City with the fabulously rich interior of the continent, nor the march of invention which was to create a wider gap between 1811 and 1911 than existed between 1811 and the beginning of the Christian era. It was as though we were to plan New York City in ignorance of the fact that ten years from now the power within the atom would be unlocked and harnessed and all our apparatus for the use of steam and electricity rendered obsolete.

They might, indeed, have anticipated that carelessness in human nature that was to allow the city to give away much of its waterfront to industrial and commercial uses. But they were still in the pioneer frame of mind. America's problem in their day was not man but Nature. There was more land, even on Manhattan Island, than anyone knew how to make good use of. In their street design they did what seemed wisest—that is, they laid out numerous streets running across the island from river to river, where it was to be expected traffic would be heaviest, and a fewer number of avenues running north and south. Going north, one very soon ran into unsettled territory. It did not seem likely that there would be much hauling in that direction. Nor would there have been, probably, if the steam engine and its successors had not come into being. After all, they were not planning a city in the way in which we have to. They left industry, commerce, and dwellings to fight among themselves for space, confident that this was a principle under which everything would turn out for the best. And as a matter of fact their children and grandchildren did about the same thing. New York was developed as the result of a clash and balance of forces. No one has ever seen its future as a majestic whole. It has done great things, expensively, even magnificently, but only when emergencies forced it to do so. Real city planning contemplates action far in advance of the emergency. It hopes to prevent evils, instead of waiting until they become intolerable and then trying to cure them.

Nearly a hundred years passed after Messrs. Morris, DeWitt, and Rutherford affixed their signatures to their report. New York, which had jogged along very comfortably in their day, increased its pace and its size year by year. It sprawled over nearly the whole of Manhattan, spread across the Harlem and the East River, merged with Brooklyn, and really, though not formally, stretched far into New Jersey. Smaller communities which had once been independent were drawn within the influence of the greater city, like leaves into a whirling pool of water. New York was becoming a Sargasso Sea of humanity—a very lively Sargasso Sea, to be sure. In 1903 Mayor George B. McClellan, coming young and enthusiastic to office, appointed what he called the New York City Improvement Commission to draw up the first comprehensive plan. In 1907 the committee reported. It suggested, in brief, new traffic arteries within and between the boroughs; a unified park system for each borough and the reservation or recovery of portions of the waterfront for recreation purposes; an attempt to dignify the harbor front by modern piers and buildings, with provision for recreation piers in lower Manhattan; the broadening of roads and avenues and the removal of obstructions.

In 1907 this program would have been expensive; today much of it would be impossible. Yet had money spent in other directions been focused on carrying out the plan of 1907 the important portions of it might have been realized with no additional burden on the business man or the taxpayer. In 1913 a Heights of Buildings Commission was appointed, and Mr. Edward M. Bassett was made chairman. To the work of this commission may be traced the zoning ordinance of a few years later. It produced the germ of the set-back principle which has literally remodeled the architectural scheme of the city's newer buildings.

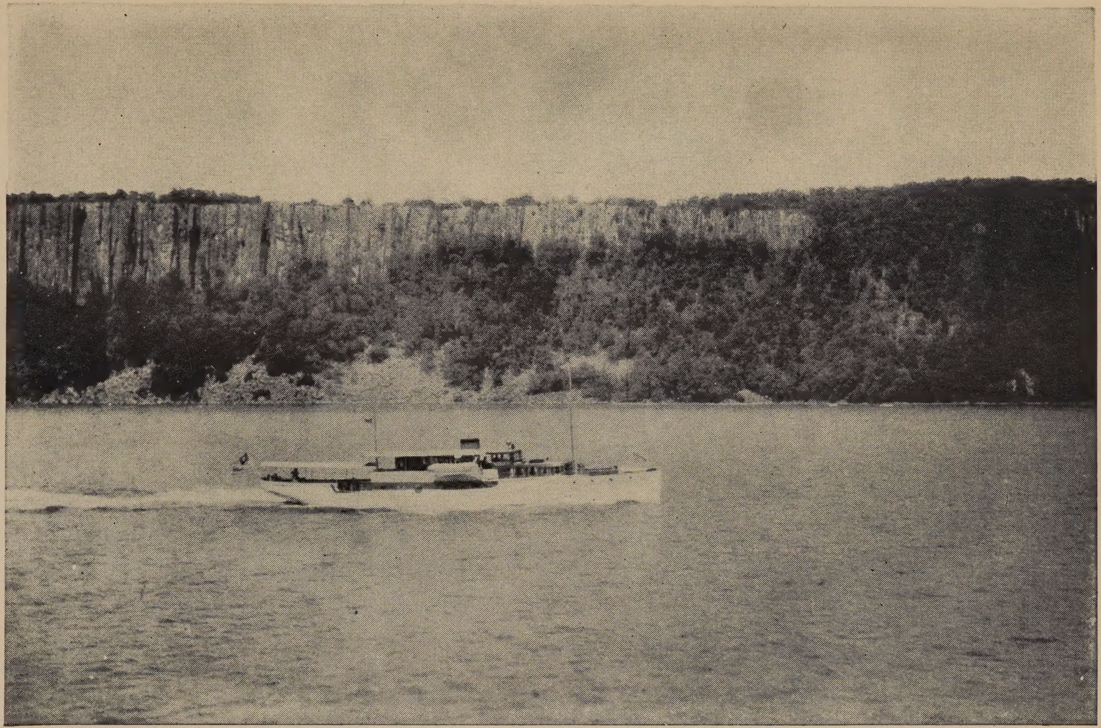
Meanwhile the enthusiasm aroused by the Chicago World's Fair and by the work of Burnham on the Chicago Plan had not died down. Among the men who had caught Burnham's spirit was Charles Dyer

Norton—a man who is almost as significant in American city planning as was his near-namesake, Professor Charles Eliot Norton of Harvard, in the development of American culture. When the McClellan Commission's report had been laid away in the pigeonhole in which so many excellent proposals lie forgotten, Norton refused to accept the result as final. In a letter to Mr. Frederic A. Delano, written in 1921, he reminds his friend that the two had been in agreement as early as 1911 that New York should have a city plan. Three years after this, in 1914, Mr. George McAneny, then President of the Board of Aldermen, organized a Committee on the City Plan, of which he was chairman, with the presidents of the five boroughs as members. To aid in the work of this committee he appointed an advisory group of architects and business men, with Mr. Norton at its head and Edward M. Bassett, Irving T. Bush, and others who showed a keen interest in city planning on the list of members.

Mr. Norton's grasp of the problem and his contribution toward solving it can hardly be overemphasized. "I doubt," said Mr. McAneny, "whether any man in the history of this town has done more for its ultimate advancement and improvement than this man who came to us from Chicago, where he had been chairman of its Committee on Plan of Chicago, who brought here not only his habit of success, but a vigorous civic spirit the equal of which

I have rarely seen." Or let us take some of Mr. Norton's own words, included again in his informal letter to Mr. Delano:

> The New York streets and towers and squares are fascinating. The situation is very grand. The Hudson, the environs of mountain and of shore, the variety of contours, make a situation with which only San Francisco can compare. Walk north from the foot of Wall Street, follow the East River to Corlears Hook, and swing over into the Ghetto through Tompkins Square, past St. Mark's or Stuyvesant Square, Gramercy Park, and so through Madison Square up Fifth Avenue. The views are entrancing. You go under great bridges, the tide rips by, sweeping the shipping up or down. The Navy Yard opposite is picturesque. The old slips like Coenties Slip, Burling Slip, Beekman Slip, where the Colonial ships used to lie, are now sleepy squares surrounded by ancient rookeries of Revolutionary days. There are reminiscent smells of fish and coffee and spices. There are ships at docks being unloaded, occasionally a full-rigged ship at that.
>
> There is offered a remarkable opportunity for an elevated parkway similar to the one on the Algiers waterfront. The trucking traffic could go beneath, as it does now, and on the upper level there would be ample space for motors and buses to speed to the Battery unhampered by cross traffic. Occasionally this Water Front Parkway, with frequent ramps from upper to lower levels, could be widened into small parks and playgrounds, with salt-water swimming pools for the children, thus providing generous recreation facilities for the densest population in the world which parallels the river all the way but is now shut off from it, just as formerly people in Chicago were shut off from Lake Michigan. Eventually this Water Front Parkway could be extended all the way around



Courtesy, New York Central Lines

THE PALISADES OPPOSITE HASTINGS-ON-HUDSON
One of the most urgent and important needs in the Region is that of reserving a wide margin of land on the top of the Palisades as a permanent open space

Manhattan Island. Burnham's dream of getting folks to water all over again!

Norton's committee got together and published a series of reports by the city's engineers on harbor facilities, building heights, and congestion. It also, in Norton's words, "met in a beautiful room in the City Hall once or twice and wisely resolved to give advice only when it was asked for, which was never." It began to be evident that, though whatever was to be done in the way of planning would have to be carried out by the governments of the communities concerned, the task of getting and presenting the necessary preliminary information, and of stirring up the necessary enthusiasm among the citizens, would call for volunteers from private life.

Mr. Norton now turned his thoughts in this direction.

> There could be found in and near New York [he wrote, in a memorandum drawn up in 1915] a hundred citizens —teachers, architects, artists, engineers, bankers, merchants, social workers, lawyers, editors—men and women whose names would be recognized from Maine to California as being specially expert in the subject of city planning. No American city is so rich in competent personnel. None has so superb a situation or presents so great an opportunity for a noble city plan.

Why, then, when other cities, both abroad and in the United States, were adopting magnificent civic programs, did New York lag behind? Mr. Norton believed he had found the reason. No plan, he pointed out, "has ever been projected here on a scale vast enough to capture the interest and the imagination of this group of cities, towns and villages that is New York." Everything that had been done so far had been done piecemeal, enlisting in each case the interests of only a fraction of the population.

> The new Court House project and its proposed civic center interests taxpayers and lawyers, but it does not arouse the interest of the "man in the street" of the Bronx or of Richmond, of Newark or of Bridgeport. A civic center which he never visits makes no appeal to him. The New Jersey or Long Island commuter does not often see the confusion and muddle at Forty-second Street. The atrocious lack of decent facilities at the end of the Brooklyn Bridge is not known by personal experience to those who use the Grand Central Terminal. No plan of New York will command recognition unless it includes all the area in which all New Yorkers earn their livelihood and make their homes. . . .
>
> Let some Daniel H. Burnham do for this immense community what Burnham did for Chicago and its environs: spend the best years of his life studying all the varied possibilities which lie within an area so infinitely attractive physically with a population so dense, a commerce so great—let him show how the isolated Palisades Park with its thirty square miles of wilderness, and the East Side of New York, only six miles away, with its million and a half of tenement dwellers, may be brought nearer together; how the commuters of small incomes in Jersey or the Bronx may more easily reach the beaches; how the merchants and the railroads and the public authorities may combine to reduce the cost of handling goods and maintain the supremacy of this port; where markets and

parks may be created. Let him demonstrate with unfailing logic where the civic centers of this vast population really are, and how they should be developed and embellished. In short, let him make a big, daring, imaginative plan, such as George Washington and his French engineer, L'Enfant, had the courage to make for the City of Washington one hundred and fifteen years ago—and New York will not fail to recognize and adopt her City Plan. Let his report be published in fullest detail for the use of experts and public authorities. Let it be condensed into attractive text-book form for use in our public schools, and the end of this policy of drifting, of piecemeal improvement, will be in sight. It is the young and not the old who can and must be captured. Let our young people adopt in their hearts a city plan, and the citizens of tomorrow will carry it out.

Norton knew as well as any man—he had lived through some hard, laborious years in Chicago—how much work such a proposal involved. He knew that city plans did not come into existence because some fairy godmother had waved a magic wand. But he knew also that the work could and would be done if there was the lift of a genuine enthusiasm, of a long-range vision behind it. The columns of figures would have to be gathered and added up, painstaking counts and measurements would have to be made, but this would never be drudgery if at the end were hopes of a city more shining and beautiful than New York had yet dreamed of. Norton suggested that a group of one hundred men and women from all parts of the New York Region be got together, that they should "enlist for at least five years of study and work," that a city planner should be called in, and that "at the cost of endless labor and patience . . . all the varied important interests of New York, commercial, social, industrial, artistic," should be investigated.

Norton's ideas were so clear and so forcibly put that it will be worth while to quote a few words more.

> The money which will carry out the Plan of New York [he continued] is the money which New York will spend in any event, whether it has a plan or not. With a city plan public expenditures can proceed along permanent lines; without it public expenditures are diverted into projects which are not enduring and are, therefore, wasteful. Each city administration adopts its own new policy and often undoes the work of its predecessors. In answering this same question in Chicago it was found upon investigation that upon public improvements, wrongly planned because no one had looked ahead, and which were later destroyed and replaced, the city had spent between 1871 and 1908 no less than $225,000,000. To end such waste; to bring order out of a disorder that may fitly be characterized as chaos; to make convenience and thrift take the place of discomfort and extravagance; to realize the potentialities of commerce and industry as well as of beauty and comfort and pleasure—these are the objectives of a city plan.

Mr. Norton was a trustee of the Russell Sage Foundation. It had been the wish of Mrs. Sage that at least a quarter of the income of this foundation "be applied exclusively to the benefit of the City of New York and its vicinity." It seemed to Mr. Norton and to the other trustees that there could be no better way of serving this purpose than in making the studies upon which a regional plan could be based—"a plan of great beauty, which shall represent in the broadest way all interests in the whole community, and which shall realize to the maximum the economic and social values of this great world capital and port." The original committee to carry out this project consisted of Mr. Norton as chairman, Robert W. de Forest, John M. Glenn, Dwight W. Morrow, and Frederic A. Delano. Frank L. Polk, Frederic B. Pratt, Lawson Purdy, John H. Finley, and George McAneny were subsequently members. The committee was organized in 1921. The first step was the beginning of a physical survey under the direction of Nelson P. Lewis, former chief engineer of the New York City Board of Estimate. A legal inquiry, to determine how cities could plan and how the communities within the Region could coöperate, and a survey of social and living conditions, were also begun.

It was in this way that the Committee on Plan of New York and Its Environs—a long title which seemed to be the only one which very well described the undertaking—came into existence. Its work was to be financed by the Russell Sage Foundation, but it was none the less a citizens' committee, representing a disinterested movement for improving the collective home of all the people of the New York Region. The committee knew that it could not force anyone to accept this plan, even if it had been foolish enough to want to. New York did not have and did not desire a Napoleon III to tell it where its streets should run. Whatever was to be done must be done democratically, because the voters in all the communities affected demanded it. The committee would have, in the end, to be a committee of ten million—or at least of the majority of the adults in a population of that size. It would fail unless it could stir up the kind of civic enthusiasm that once glorified the great cities of other lands and times. New Yorkers, in their vaster community, would have to unite in a common cause as the citizens of Athens and Florence had once done. And each individual would have a voice in the decision, as was not the case in Athens and Florence.

The first public meeting in announcement of the plan was held on May 10, 1922. Those who were there will long remember how eloquently, yet how very simply and unaffectedly, Mr. Norton pictured for them "the New York of a hundred years hence, a city great not merely in numbers, but great in that all its citizens, the rich and the poor, the strong and the weak, can take just pride in its power and its beauty, can share in those durable satisfactions of life which are the natural outgrowth of orderly thinking and wise planning." Herbert Hoover spoke of "the enormous losses in human happiness and in money which have resulted from lack of city plans which take into account the conditions of modern life." "The lack of adequate open spaces, of playgrounds and parks, the congestion of streets, the misery of tenement life and its repercussions upon each new generation," said Mr. Hoover, "are an untold charge against our American life. Our cities do not produce their full contribution to the sinews of American life and national character. The moral and social issues can only be solved by a new conception of city building." "We haven't quite succeeded in building a city," said Elihu Root. "Something is wrong about it. The gridiron hasn't worked satisfactorily. It is worth while to try to find out what the trouble is." Miss Lillian D. Wald of the Henry Street Settlement told of a child who saw the distant tower of the Woolworth Building at sunset and, "all unconsciously comparing that shining vision with the ugly, overcrowded, unclean, garbage-decorated houses about her, and obviously awed by the sight, exclaimed, 'Does God live there?' "

In olden times the gods men worshiped did live in their cities. The hopes and aspirations of the Athenians centered about the great Parthenon, the temple of Athena. Diana watched over the destinies of Ephesus. We may call this superstition and say we have outgrown it. But the ancient gods were also symbols of a common interest which bound all the inhabitants of a city together. Though the symbols have changed, perhaps what is good in the idea behind them may be brought again to life. Unless it can be, there may be great populations, great masses of buildings, enormous wealth, majestic enterprises, but, in a real sense, there can be no CITY.

The Regional Plan represents seven years of an effort to present a vision of a mightier and vaster New York which shall also give to its citizens a happier, a better-rounded, a more inspiring life. It is a vision often resting on mathematics and expressed in tables and graphs. But these things are necessary. They are the steel frame upon which we can drape the glowing cements, the stones and terra-cottas, which will fill the eye in the more splendid city of tomorrow.

The Regional Plan is exactly what its name implies. It is a plan which no one can superimpose upon the Region, but which must be built up by common consent out of the coöperation of millions of citizens in hundreds of communities. Its outlines will change, but this will not matter if the idea of a plan takes firm hold.

With this in mind let us see how the New York Region of tomorrow might be planned.

Chapter Nine

PLANNING FOR TWENTY MILLION

WE HAVE seen that there are plenty of precedents for city planning. But when we set out to make plans, not merely for the greatest city the world has ever known, but for the whole metropolitan region in which it is imbedded, we face a task so vast and so complicated that precedents will not carry us very far. We have before us an area five times as large as Rhode Island and one-tenth the size of England. We have a population of over ten million people, and must somehow find room before 1965 for about ten million more. Unless all talk of human progress is nonsense, we must make it possible for the twenty million inhabitants of the Region in 1965 to be happier, healthier, and more comfortable than the ten million are now. We must do this democratically. Our new regional pattern must come out of the willing coöperation of more than 400 communities, large and small.

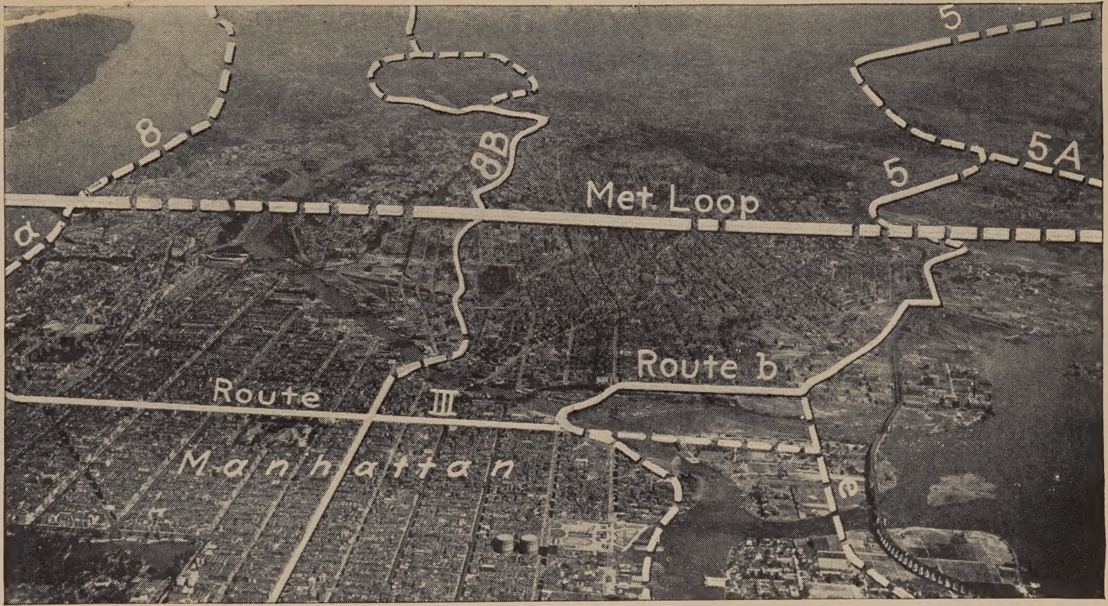
The nearest approach to our undertaking was Burnham's Chicago Plan of 1907. But there are vast differences. Chicago had to plan for less than 200 square miles, as against our regional 5,528. She had one political unit to deal with, instead of hundreds scattered through portions of three states. Moreover, though it is a little hard to realize it, the great city or urban region of 1929 is a thing far different from that of 1907. The automobile has changed almost every urban problem. In 1907 there were registered in the United States exactly 142,000 motor vehicles. For every such vehicle in use then, there are now approximately two hundred. This has not merely increased traffic congestion in city streets. It has also spread the influence of the city over a wider area. Measured by ease and quickness of transportation, and by the economic and recreational relations which quick and easy transportation encourages, the 5,528 square miles of the New York Region are far more a unit than was Manhattan Island a century ago.

So here is our vast stage—a stage well furnished by nature with islands, harbors, rivers, plains, hills, and forests, well watered and with more continuous sunlight than most great cities have been blessed with. How are we to plan the drama which is to be staged upon it? How shall we arrange the chairs and tables, where hang the pictures, and how shall we decide upon our entrances and exits? Both Burnham and Norton laid great stress upon the element of beauty in city planning. Some critics sneered at Burnham as having nothing more in mind than "the city beautiful." Perhaps there are worse ideals than that. It was an ideal ever present in Norton's mind, though he realized that in the arrangement of a city beauty was not simply something that one looked at—it was something that *worked.* But nowadays we are inclined to approach the subject in a different way. It does not do much good to impose beautiful buildings upon a city which is ill-arranged, congested, and inefficient. We do not benefit very much by spots of beauty in a sea of ugliness and tawdriness. In short, the loveliness of a modern city, if it is to have any, must be more than skin deep. Part of the existing charm of New York's show streets comes from a very practical city ordinance requiring builders to set back their upper stories so as to let in a certain amount of sunlight. But health, not beauty, was the primary object of the ordinance.

In planning our Region, therefore, we shall go back to the beginning and decide what we can do to make it more livable. We have an abundance of land of different qualities—some high, some low, some flat, some uneven in surface, some near the water, some distant from it, some on natural lines of communication, some apart from them. We must see if we can put any of this land to better use than it is now devoted to, and what are likely to be the best uses as the city's population and the Region's population increase. Some of it will be found best adapted to manufactures, some to retail or wholesale selling, some to residences, some to parks, some to large private estates. We must consider carefully the relation of these uses to one another and try to avoid the unnecessary carrying and hauling which are the greatest causes of congestion in the streets and on the transportation systems. Then we must see if we can improve and add to our streets, highways, railways of all kinds, and finally even our airways, so that we can have ourselves and our goods carried from place to place most comfortably, with the least possible friction, in the shortest possible space of time. We cannot expand our waterways, except by building canals, but we can certainly make fuller use of them.

All this will cost large sums of money. Land will have to be purchased for new parks and parkways; highways will have to be cut through along new routes or widened and improved along old routes; new terminals and approaches for railways will have to be built; there will have to be new railways, new subways, bridges over the rivers and tunnels under them, landing-fields for airplanes, new piers and bulkheads, and even new harbors. But when we say that this will cost money we are not saying that it will cost money that would not otherwise have been spent. In the long run it will cost less to lay out our city wisely, looking far ahead, than to leave it to grow, as it has been doing, haphazardly.

The proper question to ask regarding any project connected with a Regional Plan is not what amount of money will have to be spent on it, but how much would have to be spent if it were not undertaken. It is human nature to demand that any proposed change shall justify itself, but not quite so human to


5
5A
5
Met Loop
8
8B
a
Route b
Route
III
Manhattan
e

Regional Plan of New York *Photo. by Fairchild Aerial Surveys, Inc.*

PRINCIPAL MAJOR HIGHWAY ROUTES IN THE BRONX AND NORTHERN MANHATTAN

The projected Triborough Bridge appears in the lower right-hand portion of the picture as a part of Routes "e" and III

insist that a given existing condition shall also justify itself. Yet we must do this, too, if we are to make our city what it can be and ought to be. We must not merely ask whether it pays to make a change. We must ask whether it pays to leave things as they are. To sum up, the question is not whether money shall be spent, but whether it shall be spent wisely and productively. Money exists to be spent. It is merely a device for determining how the work of an individual or a community shall be applied. It cannot be better applied than in making the community a better place in which to live.

There are, of course, some things which we cannot do, even though in the course of long generations they might yield a profit in well-being. We cannot carve out a great new park in the heart of Manhattan. We cannot cut many new streets in Manhattan, in Brooklyn, in the center of Newark, or anywhere else where congestion has reached an acute point. But we can learn from the mistakes made by our predecessors in planning these areas, and avoid making the same mistakes in the open spaces which are still left to us. We can actually give more room, more air, and more light to the twenty millions who will live in our Region in 1965 than we have made available to the ten millions who live here now. In trying to do this we will be best meeting the problems of our own time.

The city which will occupy this Region in 1965 will not be built in a day. It will be the result of a gradual process extending over the next three and a half decades. If this process is one of improvement we shall reap the benefits of it step by step and year by year. But the improvement will depend upon ourselves. Nature has done all that she can or will do for the Region. As time goes on she will play a smaller part and more and more the well-being of the great community will depend upon what men do. The environment in 1940, in 1950, in 1965, and thereafter will be largely what we and our children have chosen to make it.

We shall often speak of the Regional Plan, as we go on with our discussion, as though it were a single enterprise. So, in a sense, it is. Several of the major elements of the Plan cannot be carried out at all unless the greater community unites in them. There can be no regional transportation system, for example, without united action by all the political subdivisions affected. We shall probably need other commissions organized on the model of the Port Authority. But no centralized authority or group can lay down a plan tailored exactly to the measure of over 400 villages, towns, and cities. The details must be filled in by each of the smaller communities to meet the local needs and conditions. In this way there will be many "plans." The advantage of having a Regional Plan, in which all the communities will have a part and toward which they will work, is that it will prevent conflict among these local plans. There will be room within the Regional Plan for many different kinds of combinations of towns, villages, cities or counties to carry out projects which are of collective interest to them. This may appear complicated, but it is at least no more so than the political and economic relations already existing among the different portions of the Region.

The important feature of the Regional Plan is not that it is a hard and fast prescription for everything that ails the Region, but that it is a *plan*—that it marks the application of thought, inquiry, and public discussion to questions which heretofore have been too generally left for chance and private self-interest to settle. Whatever is definite in the outlines of the various projects which we shall look at in the following chapters comes out of this process. These projects are sound according to the light we now have. The forms of most of them are indicated by the natural conditions prevailing in the Region—the arrangement of hills, level places, and bodies of water—or by the patterns that commerce and industry have already made. They are an attempt to select among the tendencies already at work in the Region those that seem to make for the well-being of the present and future population, and to discourage those that do not.

It is naturally the belief of those who have made the Plan that if it could be put into effect tomorrow it would operate effectively in its present form. As it cannot be, it must be considered as an elastic scheme which can be modified from time to time to meet conditions which it is now impossible to foresee. We have observed that the plans for the great country village which the commissioners of 1811 drew up were rendered obsolete within a generation by the construction of railways. A city planner in 1811 might be excused for believing that the city would spread northward in a thin line along the shores of the Hudson. As far as anyone could tell in 1811, inland transportation would always follow the beds of navigable rivers. We are not quite so likely to be surprised, for we already travel on earth, air, and water and can estimate the probable future of all these means of getting about the country. Still, it is not likely that everything will go exactly as we plan it. We must allow not only for changes brought about by inventions, but for the growing wisdom and experience of the race. Some of the things we do and plan may seem foolish to our descendants.

Yet we must have sufficient faith in ourselves and our community to go ahead as best we can. Moreover, we can divide our proposals into two parts—those definite and specific projects which can be carried out within a certain period of time and those necessarily more general principles which will fit almost any situation. Incidentally, we may also make another distinction, between projects that can be laid down in two dimensions on a graphic plan, such as railways and highways, and those requiring three dimensions—in other words, architectural projects. The first are necessarily the more permanent, for roads are among the most enduring things that man makes. What we do now should in any case be regarded not only in the light of its immediate usefulness, but in connection with the decades to follow. There is no clash between the two objectives. Any measure that will efficiently serve today's needs will help serve tomorrow's, also. We do not have to answer the question of the gentleman who, on being asked to do something for posterity, inquired what posterity had ever done for him.

We come now to the Plan itself, or as much of it as can be set down on paper in a very brief space. It would be easier, perhaps, to make vivid our conception of the coming city if it were entirely a matter of architecture—if we could picture golden towers climbing to the skies, gardens a hundred stories in the air, airplanes landing commuters at stations above the clouds, and similar agreeable fantasies. It may be that some or all of these things will come to pass. Already we have our golden towers, though they stop at a respectable distance below the level of the clouds. We would have more if we knew what to do with the people who would live and work in them. But we have to build up our city in what at first seems a more prosaic way, by suggesting better methods of doing things that are already being done, by controlling the inventions we have rather than by demanding still more marvelous ones. The inventions will come, at any rate, probably faster than we can deal with them.

Our first and in several ways most important proposals will take the form of lines and colors on a map. We can show on maps our proposed railway systems, highway systems, and park systems. We can also indicate the uses of the land—the most insistent problem with which a community has to deal. At first sight these may look much like so many propositions in geometry. But, like all the other mathematical expressions with which we have had to deal, each goes back to the ways in which people are living and will live. Each, moreover, has a significance, not only for New York, but for every large city. Back of the line or the spot on the map is a principle. A problem solved here is a problem solved not only for the coming New York Regional community, but for urban civilization everywhere. That will be our excuse for being very much in earnest about a number of suggestions which at first may seem matter-of-fact and local.

Chapter Ten

RAILWAYS OF THE FUTURE

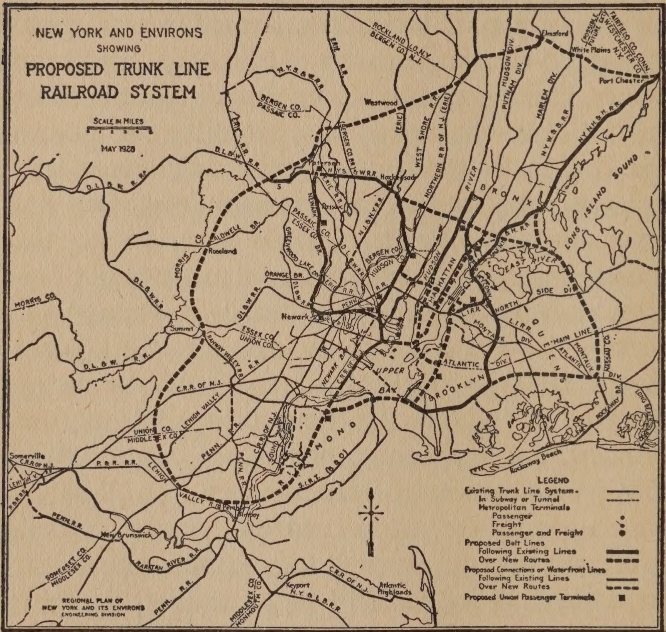
IT IS a grave question, the world over, whether ease of travel and communication has not led to an unnecessary amount of wandering and carrying about. In many urban communities, and certainly in the New York Region, rapid transit has increased some of the evils it was designed to cure. It has made it possible for people to live at a considerable distance from their work and for business to become highly centralized. Our cities are a good deal like houses with the kitchen at one end and the dining-room at the other, with a long corridor between. We can probably bring about some rearrangements which will relieve this situation in the New York Region. But as far ahead as we can see there will be a great daily flow of travel in and out of the crowded centers—especially in and out of Manhattan Island—and we must do something to make this swifter and less painful than it is at present. In trains electrically operated through tunnels, through open cuts, or over raised rights of way we already have about as swift a means of land travel as is likely to be devised. Our problem is how much money we can afford to spend and what sort of rapid-transit design we are to draw on our metropolitan map.

Rapid transit has come to signify, for most of us, the systems by which people are hauled about within the city, or hauled between the city and their suburban homes. But it is not always easy to separate it from trunk-line transportation, since most trunk lines carry commuters. In our future city, as we shall see in a moment, there will be even a closer connection, for most of the commuters will be carried directly and without change to their destinations in the congested area instead of being dumped out at two or three main terminals. Moreover, the trunk lines must work smoothly, carrying passengers and freight in and out of the Region, or there will be large and constant loss. The city does not live to itself alone. It is the result of a gathering of forces, making themselves felt over what we may call the nerves of communication—the railways and waterways. If these are ineffective it will be a sick city; if they were cut it would die.

Now let us look at the greater city with its transportation needs in view. We find that Manhattan is, and probaby will remain, the principal center—assuming, for the sake of convenience, that there can be more than one "center." But this main regional center has been built up around the Port of New York, and therefore includes the New Jersey shore across the Hudson, where most of the trunk-line rail terminals are located. East and west, respectively, of this primary center, there are two secondary centers, one including Brooklyn and the whole western tip of Long Island, and the other including the New Jersey communities centering around the City of Newark. Long Island will receive a considerable amount of traffic from New England and New Jersey. New Jersey, because it is nearest to the vast hinterland of the continent and because it has such large undeveloped areas—the Hackensack Meadows, for example—has great opportunities for growth. At the same time all three centers will be knit together by the bridges and tunnels which will to a great extent nullify the barriers made by the East and Hudson rivers. Traffic will flow back and forth from Long Island to the west bank communities almost as easily as though they were parts of one continuous land area. The lines of growth will run east and west as formerly they ran north and south.

The future city, which it is increasingly difficult to think of simply as "New York," will more and more break away from its old slim pattern and take on a waist line proper to its hale middle age. Across this expanded area it will be possible to lay down inner lines of rail communication in the form of a gridiron very nearly square, and outer lines roughly circular. These rail routes will serve a double purpose. They will enable persons who wish to reach the center of the city to do so quickly and easily. They will enable those who so desire to pass around it.

The skeleton of the railway plan will consist, to begin with, of the trunk-line roads. As we have seen, we cannot easily divide trunk lines within the Region from commuting lines. We can, however, measure the relative importance of trunk-line and commuting-line travel, and in our plans for the future we can lay down specialized commuting lines. Of the total number of railway passengers now carried to and from the city in a given year about two-thirds are commuters. The remaining third


NEW YORK AND ENVIRONS
SHOWING
PROPOSED TRUNK LINE
RAILROAD SYSTEM
SCALE IN MILES
0 1 2 3 4 5
MAY 1928
LEGEND
Existing Trunk Line System
In Subway or Tunnel
Metropolitan Terminals
Passenger
Freight
Passenger and Freight
Proposed Belt Lines
Following Existing Lines
Over New Routes
Proposed Connections or Waterfront Lines
Following Existing Lines
Over New Routes
Proposed Union Passenger Terminals
REGIONAL PLAN OF NEW YORK AND ITS ENVIRONS ENGINEERING DIVISION
Elmsford
White Plains
Port Chester
Westwood
Paterson
Hackensack
Passaic
Roseland
Newark
Summit
Somerville
New Brunswick
Perth Amboy
Keyport
Atlantic Highlands
Rockaway Beach
MANHATTAN
BRONX
BROOKLYN
RICHMOND
QUEENS
LONG ISLAND SOUND
EAST RIVER
HUDSON RIVER
UPPER BAY
D.L.&W. R.R.
ERIE R.R.
C.R.R. OF N.J.
LEHIGH VALLEY R.R.
PENN. R.R.
N.Y.N.H.&H. R.R.
L.I.R.R.
WEST SHORE R.R.
NORTHERN R.R. OF N.J. (ERIE)
N.Y.S.&W. R.R.
HUDSON DIV.
HARLEM DIV.
PUTNAM DIV.
S.I.R.T. (B.&O.)
RARITAN RIVER R.R.
N.Y.&L.B. R.R.

A SYSTEM OF RAILROADS TO SERVE THE REGION amounted, in 1924, when a careful count was made, to more than 81,000,000. By 1965 it is believed that it will amount to about 270,000,000, or more than the total railroad passenger traffic of 1924. We may expect a roughly corresponding increase in freight. So we may well begin by laying down a great outer belt line, sweeping around the heart of the Region, through New Jersey, Long Island, Westchester County, and a corner of Connecticut, at an average distance of about twenty miles from the New York City Hall. All railroads entering the Region will be connected with this belt line. By means of it a car coming in from the hinterland can be shunted around the city and sent along to some further destination, can be delivered at or near almost any pier, can be unloaded or loaded at any one of the outer ring of factories which it is hoped will grow up along the belt line, or can be sent in to points near the heart of the city.

It is much easier to trace this belt line and its connections on the map than it is to describe them in printed words. It will pass through or near Greenwich, Connecticut; Port Chester; Elmsford; and so, by a tunnel, to a connection with the Erie system near Sparkill. This point, it may be remembered, is not far from the old Erie mole at Piermont, built in the days when it was thought that the water haul down the river could be accomplished more quickly and cheaply than a corresponding rail haul. The belt line would leave the Erie near the boundary between New York State and New Jersey and swing through Westwood, Paterson, Summit, Plainfield, and Metuchen to Perth Amboy. Then it would run along the western and northern side of Staten Island, dive under the Narrows, follow the Long Island Railroad for some distance, bend north to strike the lines leading to the Hell Gate Bridge, and then follow the New Haven lines to Greenwich.

There would be a branch under the Kill van Kull from Richmond to Bayonne. Another branch, breaking away at Linden Boulevard in Brooklyn, would tap Jamaica Bay and then swing around through Queens and across the East River to join the main line again in The Bronx.

We must, of course, think of these projects in terms of what they will do to the life of our community if we are to get any fun out of studying them. They are not merely conveniences for the city as it is. They are devices by which the city will be stretched out into a different and, let us hope, a more satisfactory shape. They should be of especial value in encouraging the migration of industry out of the congested areas to a belt where it will have room to grow without getting in everybody's way. We have seen that this migration is already going on. Relatively cheap land, made easily accessible, will stimulate it. The belt-line routes have been chosen partly with a view of putting down factories on land that is best fitted for them. At the same time they will enable people who work in the factories to get to and from their jobs without passing through the crowded areas.

It is impossible to do more than suggest the details of the railway lines which the Regional Plan proposes within the outer belts. One inner belt line will circle the New Jersey shore opposite Manhattan. Another, almost entirely within the Borough of Manhattan, will follow the Hudson River tracks of the New York Central Railroad from Spuyten Duyvil south to Eighty-first Street, then dip underground along the West Side to the Battery, then loop north under the Bowery and Third Avenue to strike the outer belt. A third, lying in Brooklyn and Queens, will leave the outer belt in the Bay Ridge section, dive under Newtown Creek, tap the Long Island Railroad in Long Island City, and reach the New York Connecting Railroad at Woodside. Connecting belt lines will run between the lines in New Jersey and those in New York City. In this way each one of our three great "centers" will have its own circulatory system, in addition to its share in the larger one which serves the entire Region.

Some of the connecting lines in this system will be imposing in themselves, even though they are but fractions of the whole. Thus, there will be a line from Bogota on the New Jersey belt line across the Hudson River Bridge at Fort Lee, thence across Upper Manhattan and over the Harlem River on a new bridge to connect with the belt lines of The Bronx and Westchester. Another proposed line will strike off from the New Jersey belt railroads at New Durham, pass under Bergen Hill, the Hudson River, Fifty-seventh Street, and the East River, and so connect with Queens. Still other lines will connect Jersey City with Staten Island by means of a new crossing of the Kill van Kull, and with Brooklyn and Queens by means of a tunnel passing under the Hudson River, the tip of Manhattan and the East River. The expenditure of labor and capital required for such undertakings may seem nothing short of prodigious. But it is an expenditure which as the city grows will pay rich dividends, not to a few but to the entire community.

So far we have touched only the main outlines. If there were space, and if we had sufficient patience, we might glance at some nineteen or twenty other projects, each of which has been carefully worked out and each of which will serve a distinct and important purpose in our railroad system. These will have for their functions the connecting of existing and proposed main lines and belt lines, and the service of existing or proposed port developments. Some of the areas tapped would be the Hackensack Meadows, of which we shall learn more a little later on; the proposed industrial and port developments in Jersey City and Bayonne; the waterfronts of Port Newark, Elizabethport, Arthur Kill, Perth Amboy, the Raritan River, Cheesequake Creek and Lorillard; the Bush Terminal, Erie Basin, Atlantic Basin and Brooklyn Navy Yard; the proposed port and industrial section on the westerly side of Jamaica Bay; the existing and proposed industrial areas on the southerly side of Newtown Creek; and the East River waterfront of Queens.

The significance of these lines will be obvious to anyone who will study the map. The most interesting thing about them, perhaps, is the proposed developments which they will serve. Heretofore development of industrial areas has gone on piecemeal, with results which sometimes were very confusing and unsatisfactory. The mapping out of a railroad network, some of it to meet existing needs but much of it aimed at needs which will arise later, is a necessary preliminary to controlled development.

The carrying of freight will naturally be an important function of the belt-line systems. But as industries do not operate themselves automatically—at least pending the invention of "iron men" or "Robots" which will relieve the average man of the necessity of labor—they will profoundly change the nature of passenger travel within the Region. To facilitate this service there will be a number of new union passenger terminals. New Jersey will have six on its inner belt line—at Paterson, Hackensack, North Bergen, Jersey City, Newark, and a point in Clifton southwest of Passaic. Manhattan will retain the Grand Central and the Pennsylvania Terminal, and will have a new terminal in the neighborhood of One Hundred and Seventy-eighth Street and Amsterdam Avenue. The Bronx will have a terminal near

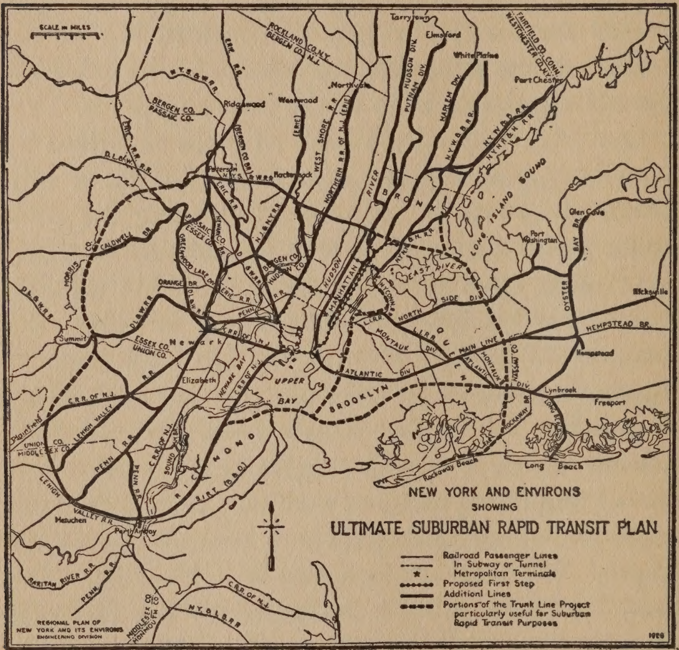
One Hundred and Forty-ninth Street and Mott Avenue, Queens will have one near Queens Plaza, Brooklyn will have one near Prospect Park Plaza, and Richmond's will be on the outer belt line south of Port Richmond.

These stations and the lines entering them will do away with the present necessity of using two or three supplementary means of transportation when coming into New York City from points outside the Region. The harassed traveler will no longer have to go from train to ferry or tube, and from ferry or tube to elevated or subway. He will be taken directly and comfortably to any community within the central and suburban parts of the Region. Doubtless he will be glad enough not to clutter up the purely local transportation lines with his person and his baggage. And this will be nearly as important, perhaps, if not quite so showy, as the cloud-capped towers and palaces of the ideal city we all like to imagine. Nor will it do away with the towers and palaces, for there is no reason why the great terminals which will be the gates of our coming city should not be architecturally imposing and have magnificent approaches.

So much for the great freight movements in and out of the Region, and for the passenger travel which originates outside the regional boundaries. If we analyze the daily flow of travel within the Region we find that there still remain two classifications to deal with. One is of the type illustrated by the existing subways and elevated lines. The other is the commuter traffic, which originates in communities outside the congested areas but within the Region. At the present time most of the commuter traffic is fed into the urban rapid-transit systems, adding to a burden which is already so great as to have passed the limits not only of comfort, but of decency. At the same time the commuters have loaded the existing trunk lines to the breaking point.

Our Plan will relieve both of these situations by establishing an almost entirely new system of suburban rapid transit. It will try to carry the commuter without change, or with a minimum necessity for change, from his home station to within walking distance of his job. It will also try to reduce the necessity of passing through the crowded parts of the city in order to get from one outlying community to another. A further source of waste and inefficiency which it should remove is the present system of unloading trains at terminals during the rush hours and either storing them or running them back empty. We shall see how this is to be done. The need for early action is indicated by the fact that suburban traffic is increasing rapidly. In 1924 about a quarter of a million commuters were hauled in and out of New York City. By 1935 this figure will probably have increased to about 425,000, nearly half of it coming from the New Jersey side of the Hudson.

In discussing rapid transit we should remember that no part of the Plan stands alone. Commuter travel must be fitted in with trunk-line traffic on the one hand and subway traffic on the other, with the probable or proposed locations of new urban sub-centers, with the highway system, existing and


SCALE IN MILES
NEW YORK AND ENVIRONS
SHOWING
ULTIMATE SUBURBAN RAPID TRANSIT PLAN
Railroad Passenger Lines
In Subway or Tunnel
Metropolitan Terminals
Proposed First Step
Additionl Lines
Portions of the Trunk Line Project particularly useful for Suburban Rapid Transit Purposes
1928
REGIONAL PLAN OF NEW YORK AND ITS ENVIRONS ENGINEERING DIVISION
Tarrytown
Elmsford
White Plains
Port Chester
Northvale
Westwood
Ridgewood
Paterson
Hackensack
Newark
Elizabeth
Summit
Plainfield
Metuchen
Perth Amboy
Glen Cove
Port Washington
Hicksville
Hempstead
Lynbrook
Freeport
Rockaway Beach
Long Beach
UPPER BAY
BROOKLYN
RICHMOND
MANHATTAN
BRONX
QUEENS
HUDSON RIVER
EAST RIVER
LONG ISLAND SOUND
NEWARK BAY
HUDSON DIV.
PUTNAM DIV.
HARLEM DIV.
N.Y.N.H.&H.R.R.
WEST SHORE R.R.
NORTHERN R.R. OF N.J. (ERIE)
ERIE R.R.
N.Y.S.&W.R.R.
D.L.&W.R.R.
CALDWELL BR.
MORRIS
ORANGE BR.
C.R.R. OF N.J.
LEHIGH VALLEY
PENN. R.R.
RARITAN RIVER R.R.
N.Y.&L.B.R.R.
MAIN LINE
MONTAUK DIV.
ATLANTIC DIV.
HEMPSTEAD BR.
OYSTER BAY BR.
ROCKAWAY BR.
LONG BEACH
NORTH SIDE DIV.
ROCKLAND CO. N.Y.
BERGEN CO. N.J.
BERGEN CO.
PASSAIC CO.
ESSEX CO.
UNION CO.
HUDSON CO.
MIDDLESEX CO.
MONMOUTH CO.
FAIRFIELD CO. CONN.
WESTCHESTER CO.

Solving the Commuters' Problem of Getting to and from Work

planned, and with a careful consideration of the best uses of the regional area. As commuting is expensive and not necessarily a pleasure, the commuting haul should be as short as possible. At the same time the commuter should live where living conditions are best and work where working conditions are best. His children should be able to reach their schools easily, his wife get to her favorite shopping district, and the whole family find its regular and occasional recreation with the minimum of trouble and effort. For when we speak of the congestion of streets, highways, and means of travel we are merely adding up the wasted time, strength, and sometimes lost tempers of a multitude of individuals and families.

An adequate commuting system for the New York Region of the future must mean, of course, not only a better organization of existing railways, but the construction of new ones. The first step proposed here is a loop connecting Manhattan and New Jersey, hooked up on the east with the Long Island Railroad and on the north with the New York Central, the New Haven and the New York, Westchester and Boston. There would be tunnels under the Hudson at Fifty-seventh Street and at a point near the Battery. Other tunnels would be constructed under the East and Harlem rivers. But as these lines would run far beneath the surface of the ground the passage under the rivers would add only slightly to the expense of construction.

Out of the comparatively simple loop just described would be developed a complex system of lines—complex, that is to say, on the map and in words, but not complex in the sense that it would be hit-or-miss. Unlike the present suburban railways, this would be operated as a unit. There would be a great belt, with interconnecting lines, through New Jersey, following in part the trunk-line railways already described and including much the same territory. On Long Island the trunk lines would again be used, as well as existing routes and some altogether new ones. Passengers would thus be brought into or across Manhattan, from Connecticut, Westchester, Long Island, New Jersey, and the upper counties along the Hudson. The system would drain these areas like a river, except that, unlike a river, it would not bring all its flow to a common point. The centers of congestion would, of course, be served, but those who did not wish to be landed at Forty-second Street and Broadway would not have to be. Passengers would be distributed and picked up on Manhattan by means of the loop previously mentioned.

At the beginning commuters coming in from New Jersey on existing railroads not yet electrified would have to change cars in order to enter the main system, but as the railroads entering the city from the north and east are already electrified, their trains could be shunted at once into the new tunnels. Under unified operation, trains could be run through the entire system from one end to the other. Amateur railroaders may amuse themselves by taking the map and seeing just how many combinations of loops are possible. The arrangement would be absolutely flexible. The available rolling stock could be easily mobilized whenever and wherever within the Region it was most needed. The confusion, duplications, and general chaos of present-day commuting conditions would largely be eliminated. We should not do away with crowds—else there would be no city—but we should do away with the congestion caused by delivering large numbers of people at inconvenient places. Incidentally, much pedestrian traffic on the streets, such as now clogs the sidewalks around the Grand Central Station, would be disposed of, and the burden on the subways would be lightened.

Would such an expensive apparatus of lines and tunnels earn enough to pay its cost? We have only to turn to the statistics of commuting traffic into New York City and the records of those who shifted from the train or ferry which carried them into the city to some other kind of transportation. As early as 1924 there were probably about 118,000,000 commuting passengers who did this. The number is not exact, but if anything it is too low. We may assume that these 118,000,000 would have used the suburban loop we first described if it had been in existence. This loop—the first step—would be about thirty miles long. If it had been in existence, double-tracked, in 1924, it would have been about half as densely crowded as the subway. Any railroad carrying half as many passengers per route mile as the subway is doing all it decently can. By 1935 there will have to be four tracks over the thirty-mile route to meet the same conditions. If the inner loop were begun as soon as this book is published, it would not be ready too soon. If the other sections were then taken up in their logical order, the natural growth of the Region's population would give them their patrons as rapidly as the lines could be completed.

This is the real answer to the question of cost. If a community needs certain transportation facilities in order to function efficiently, it can afford them. There is no other solution except a petition of bankruptcy. This is not to say that every line which we have laid down on our map must be exactly followed, or is likely to be. But some such system as we have glanced at is inevitably suggested by the lay of the land and the grouping of the population within the New York Region. It is not a project for visionaries. It is as practical as tomorrow's bread and butter.

At the same time even tunnels and railroad tracks may have an appeal for the imagination. We must not forget that all these devices have for their purpose to make as easily available as possible to as many people as possible the riches of the mightiest of cities.

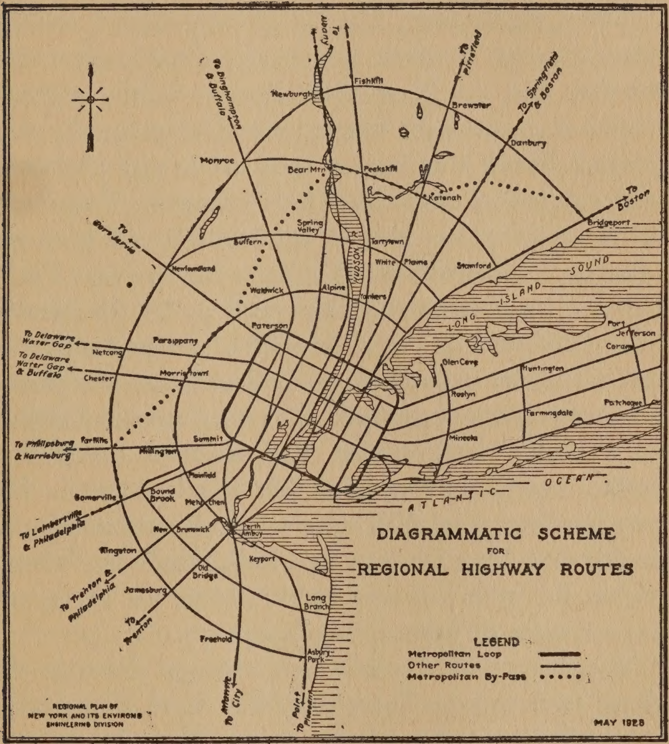
Chapter Eleven

HIGHWAYS AND BYWAYS

THE first highway was perhaps the trail made by some wandering tribe from water-hole to water-hole, and the first street was perhaps created when the original cave grew too small and some of the inhabitants moved along the cliff and found others. We cannot conceive of a civilization without highways and streets. Yet the problems connected with them change with the changes in the kind of civilization, and especially, of course, with alterations in the purposes and means of communication. There are in parts of Europe existing villages, or portions of villages, which tell plainly of a time when wheeled vehicles were little used. Later came a period when commerce flourished, there was much traveling, and the highways became like thin bright threads of intensely active and sophisticated life stretching across the country. The railroads, about a century ago, gradually killed off this old life of the road. The automobile, within our own generation, has revived it. The highways are again becoming a main factor in the transportation of goods and of passengers. In consequence of this unforeseen event most plans for streets and highways made more than 30 years ago are obsolete. We have to begin all over again. More and more we have to think about thoroughfares in terms of larger units. It is to the interest of the entire New York Region to have a highway system that will be just as much a unit as its railway system. This becomes the more obviously true when we remember that highways do perform many of the functions of railways.

When we think about planning the regional highway system some general principles become evident, in addition to those already mentioned. The highway pattern will somewhat resemble the railway pattern, for it must conform to the same natural features and the same groupings of population. There must be the great arterial highways, with connecting lines and branch lines to feed them. Recreation should not be forgotten, and bridle, cycling, and pedestrian paths should be accessible from the main roads. The highways should be developed with consideration for the best economic uses of the land—a topic to which we shall return later. The highway system should be coördinated with the rail system, since the truck and passenger car must take up the work of collection and distribution where the railway leaves off.

Finally, we may be sure that many hundreds of miles of new road will be built in the New York Region within the next few decades. If not built with a general plan in mind, they will be built without one. The wisdom of looking ahead and trying to find out just what kinds of roads we should have, what functions they should serve, and where they should run, is beyond question. The highway plan


To Albany
To Binghamton & Buffalo
To Pittsfield
To Springfield & Boston
Fishkill
Newburgh
Brewster
Danbury
Monroe
Bear Mtn
Peekskill
Katonah
To Boston
Spring Valley
Bridgeport
To Port Jervis
Suffern
Tarrytown
White Plains
Stamford
Newfoundland
Waldwick
Alpine
Yonkers
Hudson
Sound
Long Island
Paterson
Port Jefferson
Coram
To Delaware Water Gap
To Delaware Water Gap & Buffalo
Netcong
Parsippany
Chester
Morristown
Glen Cove
Huntington
Roslyn
Patchogue
Farmingdale
To Phillipsburg & Harrisburg
Far Hills
Summit
Millington
Mineola
Plainfield
Bound Brook
Somerville
Metuchen
Atlantic Ocean
To Lambertville & Philadelphia
New Brunswick
Perth Amboy
DIAGRAMMATIC SCHEME
FOR
REGIONAL HIGHWAY ROUTES
Kingston
Keyport
Old Bridge
To Trenton & Philadelphia
Jamesburg
Long Branch
To Trenton
Freehold
LEGEND
Metropolitan Loop
Other Routes
Metropolitan By-Pass
Asbury Park
To Atlantic City
To Point Pleasant
REGIONAL PLAN OF NEW YORK AND ITS ENVIRONS ENGINEERING DIVISION
MAY 1928

The Scheme upon Which the Proposals for an Adequate Highway System Are Based

must relieve present congestion and provide for future needs. Like the railroads and rapid-transit systems, it should be scientifically adapted to the primary task of getting goods and people from point to point with the least possible friction This will mean going around crowds wherever convenient, instead of banging through them.

The highway map, like the railway map, is strung upon a loop—a result which arises naturally from the fact that the New York Region is like a great circle—a circle with one quarter bitten out by the ocean. There was once a time when city planners laid out streets radiating from a center. Burnham did something like this in his monumental plan of Chicago. But neither in Chicago nor in New York will such a pattern work out well under the conditions produced by the automobile. Its probable effect would be to produce a hopeless jam at the point where the streets centered. Yet we must have traffic ways which will enable motorists to reach the "center" of the city, or any other spot in its area. So we allow our great thoroughfares to spread out from the Metropolitan Loop or Belt Line Highway. Then, within the area inclosed by this loop, we create or use a system of intersecting highways.

The loop would run at an average distance of about twelve miles from the New York City Hall. It would begin, let us say, at the New Jersey approach to the Hudson River Bridge between Fort Lee and Washington Heights, gouge its way across Manhattan at or near One Hundred and Seventy-eighth Street in an open cut, cross the Harlem River on a new bridge, traverse The Bronx partly by existing streets and partly by a tunnel, jump into Queens over the East River between Old Ferry Point and Whitestone, swing through Queens and Brooklyn to the Narrows, which it might cross by bridge, tunnel, or, temporarily, by ferry; cut across Staten Island and reach Elizabeth, New Jersey, by the Goethals Bridge, circle through Union, Essex and Passaic counties to the westerly edge of Paterson, and finally pass by way of Bergen, over routes old and new, through Englewood and Fort Lee to its starting-point at the great bridge.

No one would be likely often to travel completely around this or any other loop—there are other ways of amusing oneself with a motor car. But the route would enable one to go from point to point in the Region—from segment to segment of the great circle—without dipping down into the crowded areas. Two extensions of the loop are proposed. One would run around Jamaica Bay and hook up the Rockaway Peninsula, and also the Barren Island section of Brooklyn, where New York City is developing its first municipal airport. The other would be in New Jersey. It would connect the westerly part of the loop with Perth Amboy and the Outerbridge Crossing over the Arthur Kill. A glance at the map will show how logical these extensions are.

Inside the loop will be the inner routes. Here the streets already run approximately north and south and east and west, with a few diagonals. So thickly is the district settled that diagonals cannot now be provided, except at prohibitive cost. Three east-and-west crossings, under the Hudson and East rivers, from New Jersey to Long Island, are proposed. Again we have a detail of the pattern very much like the railway pattern. One runs from Livingston, in Essex County, crosses the metropolitan district of Newark near its center, crosses the rivers by the Holland Tunnel and Manhattan Bridge, and joins the loop in Queens. The second route starts from the Metropolitan Loop at West Caldwell, New Jersey, passes under Union City, Weehawken, and the Hudson and East rivers by a tunnel, and connects at Hollis, on the Long Island portion of the Metropolitan Loop, with two main roads which diverge to run the length of Long Island. The third route starts at Totowa, in Passaic County, runs through Paterson and south of Hackensack, goes under the Hudson by a vehicular tunnel near the Fort Lee Ferry, crosses Harlem to the projected Tri-borough Bridge, and hits the Northern Boulevard east of Flushing.

Next there will be nine north-and-south routes on our gridiron. To describe these in detail might be tedious. Nevertheless, in order that we may understand the logic behind the plan, it is worth while to place them on the map. They will have an important bearing on the future of the Region, and they will be real enough and dramatic enough a decade or two hence. They will be lines of force along which the energies of the world's greatest community will express themselves. They will afford an opportunity, in many places, for noble architecture, for long vistas, for theaters and shops. One of them would approximately bisect the Region. It would begin in Richmond, on Staten Island, cross the ferry from St. George, and form a main north-and-south route along Manhattan, largely along the route of the west side elevated speedway.

A second route would go up the east side of Manhattan, closely following the waterfront of the East River. Much of the district through which it would pass has fallen far behind the pace of metropolitan development. There are still sections which can hardly be said to be existing in the twentieth century at all. Great opportunities offer for piers and other waterfront facilities, and also for the extension of the apartment building which has been going on for some years in limited areas near the East River.

Now let us look again at the New Jersey side of the gridiron. Here we will find on our map five north-and-south routes. One, starting in Richmond Borough, would cross the bridge over the Kill van Kull to Bayonne, and pass through Hoboken and Weehawken to the approach to the Fort Lee Bridge. It would supply a continuous route along the easterly side of Hudson County, such as does not now exist. A second route would roughly parallel it a little further to the west. A third route would run west of the Hackensack Meadows and Newark Bay, serving the new developments to be expected in that district; a fourth would run along the easterly slope of the First Watchung Mountain Range, giving Montclair and the Oranges ready access to points north and south; and a fifth would pass through the business center of Newark and follow the Passaic River to Hawthorne. This last should make a charming boulevard and parkway route and recover some of the neglected scenic beauties of the Passaic.

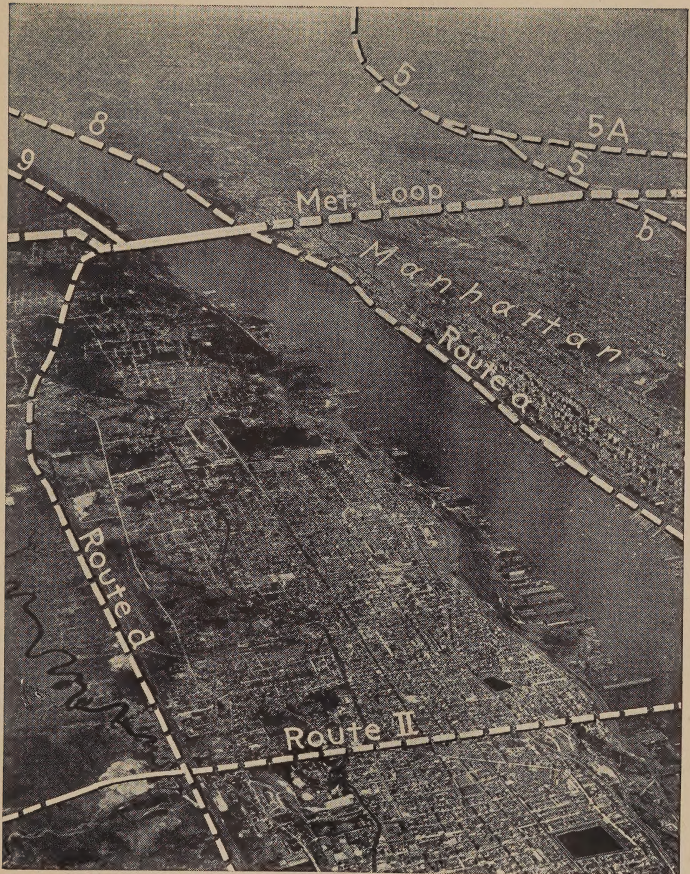
The remaining two of our north-and-south routes are in Long Island. The first would start in the Fort Hamilton section in Brooklyn and connect the downtown business sections of Brooklyn and Queens, following for some distance the east shore of the East River. It would go into The Bronx over the Tri-borough Bridge and follow the east shore of the Harlem River until it connected with the Metropolitan Loop. The second would start from the Flatlands section of Brooklyn, traverse the Bushwick section, make connections with the Queens and Nassau boulevards, cross the Tri-borough Bridge as the first route does, and then run northerly through The Bronx to the east of its companion road.

Next would come some twenty "radial routes," which would be in most instances extensions of our gridiron bars and their connections beyond the framework we have already inspected. They would radiate all around our three-quarters circle in a design the nature of which can be better understood by a little map study than from many pages of description. They would tap Long Island, Westchester County, Connecticut, the upper Hudson along both banks, the Interstate Park and other recreation areas, and western and southern New Jersey. Some of these roads would form boulevards and parkways. Like practically all the parts of the proposed highway system, they would run in part over roads already in existence or provided for.

The important fact about our highway plan is not the amount of new construction that it calls for—though that is large enough—but the fact that it is an attempt to treat the highways of the entire Region as a unit. We are approaching the problem of streets and roads as we would approach that of railroads. We must of necessity do so, for the automobile has made the function of the highway very much like that of the railroad. To complete our picture we should take notice of a number of proposed "outer circumferential routes." These, as the name implies, connect some of the outlying communities and have a tendency to parallel the lines of the roughly circular regional boundaries. Many of them can be made scenically attractive and will be inviting for pleasure drives. They can also be used as by-passes—that is, as means of going around rather than through the congested centers.

It would be easily possible to utilize the metropolitan highway system to make a great by-pass by which through traffic coming from the west or southwest could reach New England without passing through the heavily-built-up sections of the Region. It is expected that there will be a good deal of this long-haul traffic through the Region. What there is of it at present must of necessity pass the points of congestion, with consequent expense, annoyance, and loss of time for everyone concerned. The proposed by-pass route would swing through New Jersey by way of Neshanic, Somerville, Far Hills, Morristown, Pompton Lakes and Darlington. It would then pass near Suffern and reach the Hudson at Bear Mountain. Here traffic destined for the north would continue along the west shore of the Hudson. East-bound traffic would cross the Bear Mountain Bridge and run through Peekskill, Yorktown Heights, Amawalk, Katonah, Cross River, and Boutonville. In Fairfield County, Connecticut, the route would split again, one branch going north of Ridgefield to Danbury to strike the main trunk line to Springfield and Boston, the other turning south to connect with the main highway to Boston at Bridgeport.

Finally, from the highway patterns already indicated, we can pick out those roads suitable to express traffic. The essential feature of an express highway is that there should be a minimum of interruption by cross traffic or by cars turning on or off the route. In crowded areas this will usually demand that the highways be elevated, with cross traffic passing beneath and with access provided by ramps; or that the same result be obtained by tunnels or open cuts.


5
8
5A
9
5
Met. Loop
b
Manhattan
Route a
Route d
Route II

Regional Plan of New York *Photo. by Fairchild Aerial Surveys, Inc.*

AIRPLANE VIEW OF PROPOSED EXPRESS HIGHWAYS, LOOKING NORTH FROM A POINT OVER JERSEY CITY

In comparatively open country the express highways can be carried at surface level, with the principal intersecting highways crossing either below or above them. The New Jersey State Highway between Elizabeth and the New Jersey approach to the Holland Tunnel is an excellent existing example of an express highway. Another type, though not necessarily well adapted to that particular location, is the projected elevated highway along the west waterfront of Manhattan between Canal and Seventy-second Streets, on which construction was started in 1929.

At least three east-and-west express highways and at least five running north and south will probably be necessary. These will follow routes already sketched. Manhattan will be intersected near the Battery, at or near Thirty-eighth Street, and in the latitude of the Fort Lee Bridge. It will be traversed north and south by the super-highways along the Hudson and East rivers. New Jersey will have two super-highways, running north and south, and Long Island will have one. Thus our road system takes shape. The path from cave to cave and from the tribal fireside to the water-hole remains the same in principle but has expanded enormously in extent. But we must not be awed by the complexity of our road designs. The road remains what it always has been, a way of enabling people and their possessions to get from place to place. In the city of the future we will do this by the shortest possible route with the least possible interruption.

Whether the waterways of the New York Region are to be considered as highways or as railways is a question which need not bother us greatly. They are certainly highways in so far as free-wheel traffic is carried over them and they are certainly railways in so far as freight cars are ferried along their courses. In addition they provide the foci at which rail, road, and water deposit and exchange their burdens. The waterfront of the New York Region, as we have seen, is ample for any use required of it in any conceivable future. Indeed, the sum of the piecemeal proposals already made for it is greater than any probable necessity within the next generation.

The New Jersey ship canal, between Raritan Bay and the Delaware River; the straightening of the Hackensack River, which we shall discuss in another connection; and the straightening of the Raritan River between New Brunswick and South Amboy are typical of waterway projects which fit into our scheme of highways and railways.

In addition, we can make some specific suggestions for areas already devoted to port development such as planning the land areas back of the Staten Island piers along the Narrows, so as to make them more accessible and usable; building more 1,000-foot piers on the Hudson River and Upper Bay front of Manhattan, Brooklyn, and New Jersey, so that the largest vessels can dock there; rebuilding some of the antiquated docks along the East River front of Manhattan; and making a two-level development of the Brooklyn East River waterfront between Atlantic Avenue and Brooklyn Bridge, with commercial activities concentrated on the lower level.

We have now, in theory at least, provided ourselves and our descendants with the very necessary facilities for getting around our—and their—Region. The reasons for getting around and the results to be attained thereby suggest other questions which it is now time to consider.

Chapter Twelve

PARKWAYS AND BOULEVARDS

A PARKWAY is neither entirely a park nor entirely a highway. Both legally and practically it has some of the qualities of each. Therefore it logically comes, together with its cousin the boulevard, between our discussion of means of communication and the consideration we shall later give, under land uses, to means of recreation. The ordinary highway is a public right of way, to which the owner of any piece of adjoining land may have unrestricted access. A parkway is a road and park combined, but with this right of access denied. A boulevard may look exactly like a parkway, since it may have borders of trees, shrubs, or grass. But the right of access to it is the same as to the ordinary highway.

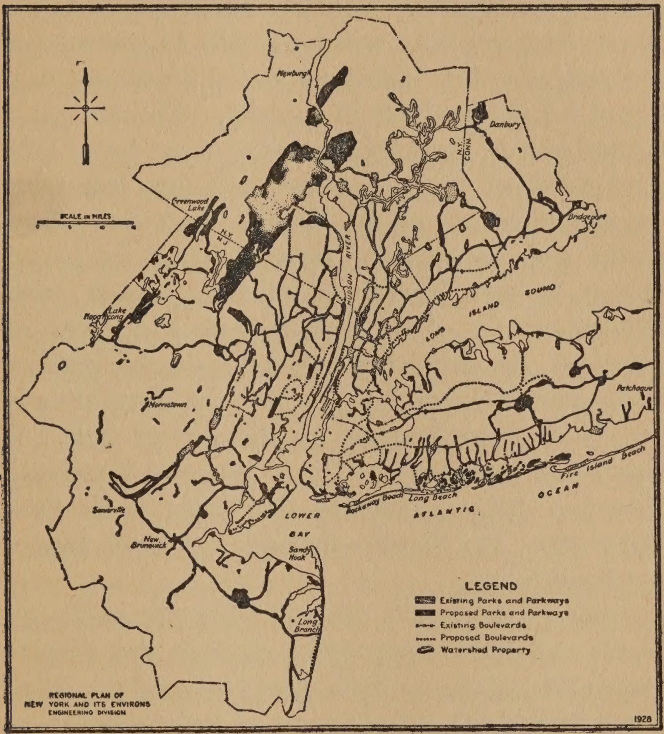
The advantages of parkways, and, within their more restricted limits, of boulevards, are numerous. A parkway may provide special ways for passenger automobiles, enabling them to travel more rapidly and relieving the congestion of the main thoroughfares; it may also have bridle paths and pedestrian "trails"; and ordinarily it will be designed to lead to open areas for picnicking, rest, and play. But though a parkway actually requires more land than an ordinary highway, it may be possible to construct a new parkway at less than the cost of widening an old highway. One reason is that costly frontage land, often occupied by buildings, does not have to be acquired. Another is the greater ease and economy with which grade separations can be arranged and the segregation of the different kinds of traffic provided for. Still another factor of great economic importance is the effect of the parkway upon land values. If it sends land values up, as it always does, we may assume that this is one of the measures of the service it has rendered. If it raises values more than an ordinary highway does, we may assume that it is of more use to the neighborhood. Some of this increased value comes back to the public authorities in the shape of larger tax payments.

Before the coming of the automobile, land adjacent to main highways was considered very desirable for residential purposes. This was clearly because they afforded ready access and because there was not enough horse-drawn traffic to raise much dust or make much noise. Peace brooded over wide country acres, past which travelers jogged at infrequent intervals. The automobile and the hard-surfaced road have made a complete transformation. The tranquil highway has become in effect a railroad, along which the constant noise and movement is anything but restful. Consequently, land abutting upon main thoroughfares has ceased to attract home-seekers. It has remained suitable for business purposes, but not all of it can be put to such uses. Business developments along the highways tend to focus around main junctions, just as on railway lines it concentrates around stations. As a result main highway routes come to be bordered with a good deal of land which is not utilized for business and which is not sought for residential purposes.

In some such cases it is both possible and desirable to make the highway into a boulevard by widening it and planting trees and shrubs. This would have the effect both of making the road pleasanter to travel and of rendering the near-by sites more attractive. The parkway carries the same principle further. As both the boulevard and the parkway add in this way to the area of accessible land upon which people will want to make their homes, they are really the most economical ways of extending the existing communication system. We can have what at first seems a luxury at less than the cost, all things considered, of a bare and bleak necessity.

As the highway system has to be supplemented, the conversion of some highways into boulevards and the creation of new parkways seem the best and cheapest ways to proceed. That the ideal is not an impracticable one has been demonstrated by Westchester County. The parkway plans in Westchester, at first accepted with misgivings as a pardonable extravagance for a rich county, have abundantly justified themselves economically and in other ways. The

Regional Plan does not need to suggest a higher standard for parks and parkways in any county than has already been adopted in Westchester.


Newburgh
Danbury
N.Y.
CONN.
Bridgeport
Greenwood Lake
SCALE IN MILES
N.Y.
N.J.
HUDSON RIVER
SOUND
ISLAND
LONG
Lake Hopatcong
Morristown
Patchogue
Fire Island Beach
OCEAN
Rockaway Beach
Long Beach
ATLANTIC
Somerville
New Brunswick
LOWER
BAY
Sandy Hook
Long Branch
LEGEND
Existing Parks and Parkways
Proposed Parks and Parkways
Existing Boulevards
Proposed Boulevards
Watershed Property
REGIONAL PLAN OF NEW YORK AND ITS ENVIRONS ENGINEERING DIVISION
1928

THE PARK AND PARKWAY SYSTEM PROPOSED FOR THE NEW YORK REGION

Parkways are so closely related to highways on the one hand and to parks on the other that it is difficult to outline the Regional Plan's parkway system without some repetition. However, there is no other way of getting a picture of what is proposed. Nor can we avoid a certain number of details if we are to have a solid understanding of what parkways may mean to the Region. To the pleasure-seeker of the future, however, they will be details of green lanes and restful vistas. Some 39 major routes are suggested for the environs of the city. We may get a general idea of them by beginning at the lower left-hand corner of the regional map and then following the circumference of the Region clockwise. First would come a parkway from Rahway, in Union County, to New Brunswick and Long Branch, with connections for Atlantic City and a number of branches. Another route would run roughly parallel to the Metropolitan Loop, which we have already described, from Paterson to the Arthur Kill. It would pass between the First and Second Watchung Mountain ranges, close to the Eagle Rock Park Reservation, and directly through the South Mountain Reservation.

Other routes would run from Summit to Bound Brook and New Brunswick; through the densely populated section of New Jersey east of the Watchung Mountains, running part way along the abandoned Morris Canal into Paterson; from Little Falls to Lake Hopatcong; from Lake Hopatcong through the mountains to the Hudson River at Haverstraw; from Suffern along the Ramapo River and through the Interstate Park to Bear Mountain; along the Pompton River, beginning at Mountain View, continuing along the foot of the Ramapo Mountains and finally connecting with a route through Bear Mountain Park to the Bear Mountain Bridge.

Between Newark and Paterson is a stretch of the Passaic River with scenic possibilities that can be realized by public ownership and development of its banks. Though it is partially built up, there are still large areas that could be acquired for recreational purposes. With the sewage eliminated from its waters the river could be used for boating and bathing, paths could be made along the shores for hikers and horseback riders, and there could be automobile roadways on both banks. This route could be linked up with the proposed Saddle River Parkway as well as with that running along the base of the Ramapos, and used as a new and direct route for pleasure traffic from Newark to the Bear Mountain Bridge. A new cross-country parkway route could run from Paterson across the Passaic and Saddle River parkways, getting over the Oradell Reservoir by a general road, then climbing easterly to meet the boulevard proposed along the top of the Palisades. In the Hackensack Meadows two boulevard loops are suggested, following the watercourses and connecting with the Passaic River Parkway. The valley of the Hackensack above Secaucus makes an admirable line for a parkway, which, making a detour to avoid the industrial sections between Little Ferry and Ridgefield, would pass through Orangeville and West Nyack, follow the west branch of the Hackensack and Toms Brook, and reach a main artery below Haverstraw.

A proposal which stands out is one calling for a route, partly parkway and partly boulevard, which would run along the west shore of the Hudson from Weehawken to Haverstraw, and which might be called the Palisades Parkway. For this purpose land along the top of the Palisades along the easterly branch of the Hudson Boulevard in Hudson County would have to be purchased. Between Fort Lee and Alpine the route would be split into a parkway route along the foot of the cliffs and a boulevard on or near the crest. At Sparkill the route would swing inland, following the curve of the higher land at that point, and returning to the river again at Hook Mountain, below Haverstraw. Of the forty miles of roadway which this proposal would require, over half follows existing rights of way and about twelve miles lie within existing parks. The route could not only be made one of the most picturesque in the entire Region, but it would relieve the heavy pressure on the main north-and-south arteries.

Crossing the Hudson into Westchester County, we find six parkway routes already being constructed by the Westchester County Park Commission. The Saw Mill River Parkway extends from Van Cortlandt Park through Yonkers, Pleasantville, Chappaqua, Mount Kisco, and Bedford Hills to the New York City reservoir system in the Croton Valley near Katonah. A section of this route was opened as early as 1927. The Sprain Brook Parkway supplements it and a short branch connects with the Albany Post Road at Hastings. The Bronx River Parkway, jointly constructed by New York City and Westchester County, has furnished an admirable pattern for later parkway construction in the Region. As this is written it is being extended, under the name of the Bronx Parkway Extension, to and across Peekskill Creek, including a connection with the Bear Mountain Bridge. Part of the extension was opened to traffic in 1928.

Another parkway is proposed to link this extension at Briarcliff Manor with Peekskill. The Hutchinson River Parkway was completed and opened as far as White Plains in 1928. The Regional Plan proposes its extension from the Connecticut line, its present proposed terminal, to Bridgeport, Connecticut. It would run from three to five miles inland through a gently rolling country mostly taken up in large estates. Besides being a pleasant deviation from the main-line highways, it would furnish a much-needed relief to traffic. A branch boulevard would tap Stamford and Norwalk. The Crosscounty and Odell parkways run east and west across the southerly portion of Westchester. The Mamaroneck River Parkway has been laid out by Westchester County from the easterly edge to the northerly boundary of White Plains. The Regional Plan suggests that this route be extended westerly to strike the Albany Post Road at Tarrytown, though the cost of the land along a greater part of this course would probably make it necessary to establish a boulevard rather than a parkway.

We now return to projects less far advanced. Along the shores of Long Island Sound east of the Boston Post Road and extending from Pelham Bay Park to Rowayton, Connecticut, is an ideal route for a parkway or boulevard. The cost of rights of way might be considerable, but the views of the Sound, with its islands, harbors, and inlets, would make the expense worth while. Shifting our position to Greenwich, we find a possible parkway route through the proposed park of the Mianus Gorge, past Indian Hill, east of Bedford, and leading into the Poundridge Park Reservation. This would open up a new way of access to Putnam Lake, Rockwood Lake, Poundridge Reservation, and the lovely valley of the Mianus. The Mohansic-Norwalk Parkway is a proposed route which would link up the Connecticut shore resorts with the Bear Mountain Bridge and the territory west of the Hudson. It would run for a considerable distance through the New York water-supply reservations.

Our clockwise swing around the great dial of the New York Region takes us south across the Sound to find some of the most important parkway proposals in the whole Region located on Long Island. One of the most ambitious of them all is the location of a parkway in the center of the island, extending from the New York City boundary to Hither

Hills Park, or within ten miles of the easterly end of Suffolk County. This would take the place of the Motor Parkway, as well as parts of its right of way. On the west it would connect with the proposed Grand Central Parkway leading into the heart of New York City. It would also be linked with an extension of Nassau Boulevard. It would afford direct access to proposed parks in the Manetto Hills and in the Half Hollow Hills, as well as to the existing parks at Camp Upton and Hither Hills. It would be a superb example of a parkway building up the land values and improving the charm of the country through which it passes.

A proposed secondary boulevard through the Wheatley Hills follows for the most part the lines of existing roads. Here all that is suggested is that certain portions be widened or straightened and that trees and grass margins be kept or planted so as to keep the features of a charming rural drive. This route is an excellent example of a highway which should never be a speedway, but should be kept for those motorists who are not in a hurry. We are always sure to have need of such roads, no matter how insistent the demand may be for an adequate provision for swift through traffic.

Other proposed routes on Long Island include an extension of the Southern State Parkway to connect with the Central Parkway at Lake Ronkonkoma and with Deer Range Park; a number of parkway and boulevard loops to provide access from the mainland to the islands of the South Shore bays; and a cross-island boulevard and parkway route from Centerport, with one branch running to Babylon and another running through the State Park at Massapequa to connect with the South Shore.

Within New York City proper a number of important parkways and boulevards are set down on our map. One is an extension of Riverside Drive northerly through the Inwood Hill Park, across the Harlem River on a high-level bridge and through the westerly edge of the Borough of The Bronx to a point near the New York City-Westchester County line. Thence there would be connections with the boulevard along the shore of Long Island Sound, and with the Saw Mill River, Bronx River, and Hutchinson River parkways. A branch would swing through the valley of Tibbetts Brook, near Spuyten Duyvil, to join a parkway route around Van Cortlandt Park. On the east side of Manhattan a boulevard route forms a continuation of Park Avenue, north of Ninety-sixth Street. This would call for the removal of the elevated portion of the New York Central tracks south of the Harlem River and its replacement by a tunnel. At the Harlem River the route would connect with a parkway proposed along the Manhattan shore as a southerly extension of the present Harlem River Driveway. On the north shore it would connect with the Grand Boulevard and Concourse. At One Hundred and Tenth Street the west-shore driveway would be intersected by a cross-town boulevard which it is proposed to develop from Riverside Drive to the Tri-borough Bridge.

From Bronx Park the north and south routes already in existence, such as the Bronx River Parkway and the Mosholu Parkway, would be brought south to connect with the Metropolitan Highway Loop and the express highway system. A cross-island route would be developed between Jamaica Bay and a proposed bridge over the East River between Whitestone and Old Ferry Point. A boulevard through Brooklyn and Queens, following King's Highway, Ocean Parkway, Eliot Avenue, and Nassau Boulevard would require expensive widening of certain streets but would probably be worth all it would cost. A main central boulevard would follow existing streets through Brooklyn and Queens, from Coney Island along Ocean Parkway, Eastern Boulevard, Highland Boulevard, Interboro Parkway, Union Parkway, and Grand Central Parkway.

A glance at a map will show how strategically placed all these routes are, and a little use of the imagination will suggest how valuable they will be to inhabitants of a highly congested area. A southern route through Brooklyn and Queens is already in part under construction. It runs from Remsen Avenue along Linden and Conduit boulevards, One Hundred and Fourteenth Avenue, Westchester Avenue, and Foch Boulevard, to connect with the Southern State Parkway. A proposed shore route in the southern section of Brooklyn follows Ralph

Avenue to Marine Park, then swings along Sheepshead Bay, Coney Island Creek, and Gravesend Bay to connect with the existing shore route at Fort Hamilton.

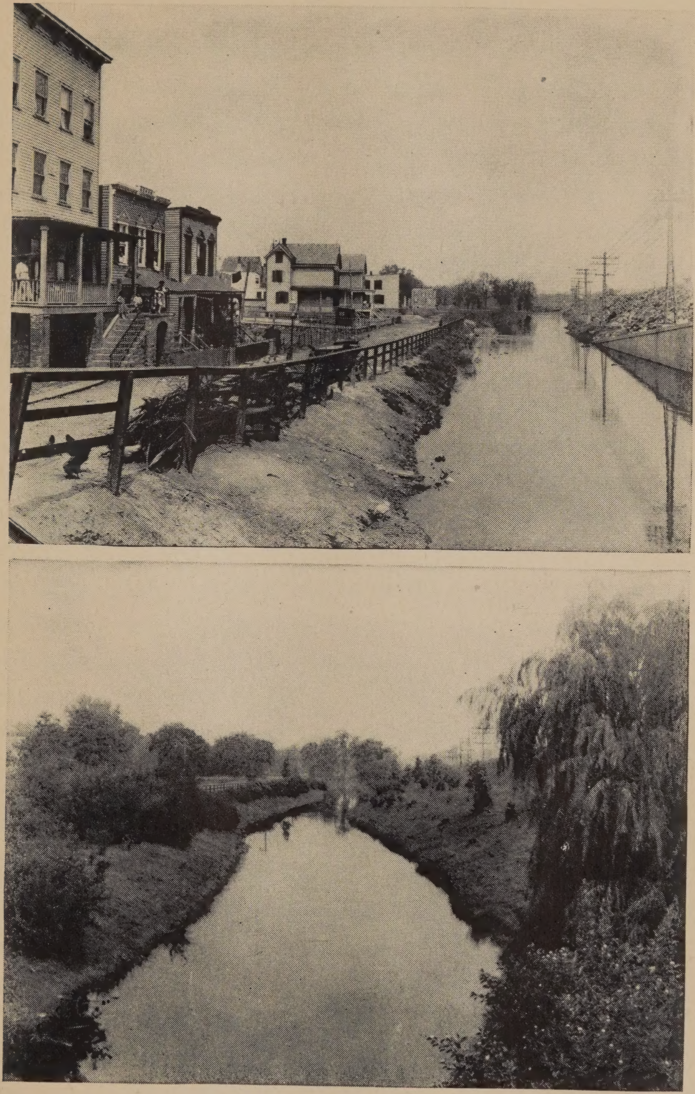
On Staten Island an ocean-front boulevard is proposed, starting at the Narrows, then running through proposed park lands along the shore to a connection with the Hylan Boulevard at Great Kills. Another parkway would run through the rugged hills in the center of the island, between the Narrows crossing and the Outerbridge Crossing to Perth Amboy. A considerable portion of the route would be within the park lands acquired in 1928 as well as through additional proposed parks. Views of bay and ocean from these points are superb. There would be a connection with the Victory Boulevard at Clove Lake Park. Another connection might run along the Fresh Kills to Linoleumville, where highway and ferry would link it with the Rahway River Parkway in New Jersey. These routes would unquestionably do much to develop Staten Island for residential uses. Finally, there would be a cross-island parkway between the proposed Marine Park at Great Kills and the Goethals Bridge to Elizabethport. This route also would cut the park lands acquired by the city in 1928.

We have now completed our survey of the major regional parkway and boulevard routes. Because it is difficult to present smaller details intelligibly, except on a map, we shall omit a description of a considerable number of connections and extensions which have it for their purpose to give more convenient access to the major system. For all residents or prospective residents of the New York Region the parkways and boulevards have a keen and personal interest, since their purpose is not merely to expedite the movements of traffic, but to afford pleasure. For others they may be of interest as an example of what can be done to open up even the most congested of urban regions and to give those who have been "long in city pent" an easy and convenient escape. It should be remembered, too, that the network of parkways and boulevards, existing and proposed, confers its benefits not only on the automobilist, but in large sections on the hiker and the horseback-rider. It is for the recreation of all the people. It makes far-away green places more accessible than Central Park and Prospect Park used to be. It makes the natural advantages of the Region usable as they never yet have been.

It is quite clear that the whole system of communications of which highways, boulevards, and parkways are parts can be carried out only by state, county, and municipal coöperation. It is also clear that the costs will be too great to permit the whole system to be developed, except over a period of years. It is all the more important therefore, to decide how to begin, what to do first, and upon what types of development the most emphasis ought to be laid. Expenses of construction must be paid out of the general or special tax funds, out of assessments upon abutting property, or out of tolls. Except in the cases of bridges and tunnels, tolls are now rarely charged, unless we put under that head the taxation imposed upon owners of motor vehicles.

The practice of special assessments is fair only if the land assessed actually increases in value in proportion to the assessment. In many cases it does not, since, as we have seen, land adjacent to main highways is not all needed for business and is not highly desirable for residential purposes. Where there is a choice it is better economy to build parkways than boulevards, and better economy to build boulevards than highways, for the reason already mentioned, that parkways, boulevards, and highways create taxable values in precisely that order. We can afford to build parkways in many cases where we could not afford to build highways. The explanation for this fact goes beyond the dry details of taxation. We can afford to build parkways because they are, as a matter of fact, of more use to us. The experience of Westchester County shows that this is not mere theory. There the areas along parkways between main intersections have been much in demand for residential purposes, and areas at the intersections have been developed as business centers.

The parkway is particularly appropriate for the kind of traffic that serves residential areas, because it can be restricted to private automobiles, as a highway cannot. Another advantage is that separation



Courtesy, Bronx Parkway Commission

THE BRONX RIVER PARKWAY

Before and after views along the Bronx River

of grades is most easily and effectively accomplished when the roads run through parks. The combination of parkways with recreation facilities provided by the public authorities in the parks themselves sometimes affords an indirect means of paying for construction. In Westchester most of the revenues used in this fashion come from public golf courses, athletic fields, bathing facilities, and an amusement park, which occupy areas of land adjacent to the parkways.

There are no maximum limits to the width of a parkway. At 160 feet or less it merely ceases to be a parkway and becomes a species of boulevarded highway. Wherever possible, however, the parkway should be widened to 500 feet, 1,000 feet, or even more, so as to provide those recreational areas that indirectly help to pay the bills. There is no particular advantage in having a uniform width, and attempts to do so are costly. The cheaper land can usually be acquired only in spots, and here the parkway can be widened, like a stream flowing through a series of bays or ponds.

The possible financial results of a wise parkway policy were suggested in the report of the Westchester County Park Commission for 1928, in which it was shown that the net budget for operation and maintenance of the parkway system had fallen from $468,585 to $287,606, while the income from rentals and concessions had increased from $60,944 to $462,518. During the three years before the creation of the park systems the assessed valuations of property increased from about $675,000,000 to about $790,000,000, or about 17 per cent, whereas in the four years immediately afterward the values increased to more than $1,300,000,000, or about 65 per cent.

If these valuations reflected the general usefulness and desirability of the land, and not a mere inflation of values, the parkways clearly paid for themselves. The Westchester County Park Commission has taken steps to see that private speculation does not soak up the value of its projects by buying land many years in advance of the probable time of development—in some cases from 30 to 40 years in advance of its needs. These projects have usually had to do with park developments, but precisely the same principle may be applied to land required for parkways, boulevards, and highways—especially for the first mentioned.

To delay too long is sometimes to postpone forever. Since the parkway proposals in the Regional Plan cannot all be carried out in the immediate future, the next best thing is to acquire the land that will ultimately be needed. Here it is a principle of economy that action be taken with the least possible delay. In many cases it may be possible to have the areas reserved by agreement with landowners. If necessary a parkway or boulevard can be rerouted in order to pass through the areas of cheapest land. It will be wise to spend money on buying land, even at the cost of delaying actual development.

This is in keeping with the central idea behind the Regional Plan. We are considering projects not for one or two years, but for a generation. Some of these are more immediately necessary than others. We cannot gild the roof on our skyscraper until we have sunk the foundations. The order in which the work is to be done is a matter of great importance and of considerable difficulty. No doubt we shall want to make changes as we go along, for we shall not see our problems in quite the same way 10 years from now, or 20 years, that we do at this moment. But in almost every field of the Plan there are some things that must be done soon or may not be done at all, and foremost among these is the acquirement of sufficient land, in the most suitable places, for public purposes.

Chapter Thirteen

WHAT SHALL WE DO WITH THE LAND?

THE question with which we have begun this chapter may seem absurd to a person standing at the corner of Fifth Avenue and Forty-second Street or packed into a subway train during the rush hour. From such a position it hardly seems possible that there can be enough land within commuting distance of Manhattan to give us any choice as to uses. But the fact is, as we have already learned, that perhaps three-fourths of the land in the Region will be left over after we have built enough houses, stores, factories, and other necessary structures, and laid out enough streets, parks, and open spaces for a population of 20,000,000 people. In so far as we can plan land uses within the Region, therefore, we must decide not only where we shall locate our various activities, but also what areas we shall, after a fashion, allow to lie fallow. This makes the planning problem a more difficult one, but it should relieve that oppressive sense of crowding which certain portions of New York City inevitably induce. There is ample room in our great regional apartment if we arrange the furniture sensibly.

At the beginning we may as well admit that in a large part of the Region we find ourselves limited by conditions inherited from past generations. We cannot re-plan the heart of Brooklyn or of Manhattan. The best we can do there is relieve some of the more pressing evils. For fundamental planning which will prevent such evils from occurring we must go to areas not yet developed. Fortunately, such areas are numerous around New York. In either case the yard-stick by which our plans should be measured is the improvement of living conditions. In the run-down central areas we can perhaps open up more traffic ways, provide more adequate open spaces around houses, and establish models for new construction. On the comparatively cheap land of the suburban areas we will have an eye to economy, to open surroundings, and to recreation facilities.

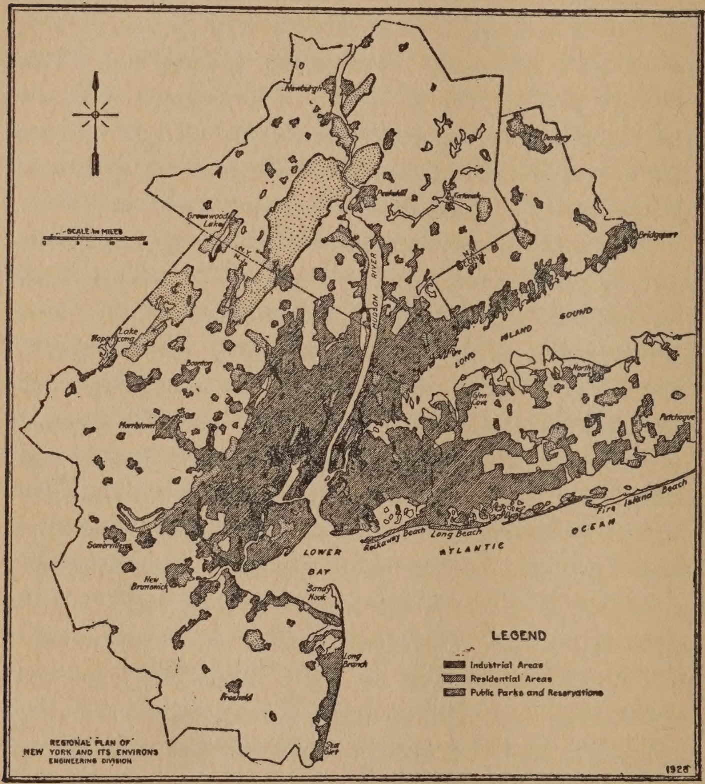
But living conditions for the average man imply first earning a living, and this means in turn that he must be comfortably near his work. Present tendencies in the Region are in the other direction—the "friction of space" which we all feel when we have to pass an hour or two a day on crowded trains is increasing. The only cure lies in a more even growth, in a better balance between industry and residence and between closely-built-up areas and open spaces. Concentration is not in itself an evil. Neither are high buildings. We may think of a cluster of skyscrapers as one side of an equation.

The higher they are the more surrounding space there should be to balance them. This principle is carried out only in part by our present zoning laws. In similar fashion we may estimate the amount of recreational space needed to balance a population which is closely packed together. The per-capita requirements for recreational area increase as the city grows larger. Neighborhood parks and playgrounds, athletic fields, large parks, and bathing beaches within easy reach of the city and regional parks at a greater distance are all necessary to a wholesome community life.

As we look ahead we may foresee some major trends in land uses within the Region. Manhattan Island will remain a center of congestion where much of the marketing, banking, finer manufacturing, and commercialized recreation of the Region will be carried on. Brooklyn, Queens, The Bronx, and Staten Island will expand as centers of industry and residence. Heavy industries will probably tend toward New Jersey, where facilities for connection with ocean and trunk-line rail routes can be provided. The great areas of the Hackensack and Newark meadows will be developed. New industrial communities will probably spring up on outlying land which until now has been largely wasted. Here there will be opportunities to plan towns from the beginning and make them models for further development.

All this growth will be closely tied up with the systems of railways and highways which we have already considered. The sum total of the problems which confront us may be indicated by the fact that it will be necessary between now and 1965 to provide over 2,000,000 new homes, with shops, stores, and public buildings which must accompany them. The proper placing of these developments will tax the community's ingenuity to the utmost. It will be just as important to prevent building where it is least desirable as to promote it where it is most desirable.

We may now consider some of the Regional Plan's specific predictions and proposals. The area within the Region may be divided into land under close development and land under open development. The areas of close development are those where we live and do our work. In general they lie nearest to the heart of the city, though there are many local variations. In a zone equally distant from the City Hall, The Bronx is much more intensively developed than Queens. In the outer zones intense development occurs in spots, often separated by land still in agricultural use. Natural barriers, such as the Hudson River, the stretch of New York Bay between Manhattan and Staten Island, the bluffs of the Palisades, and the abrupt slopes of the Watchung Mountains have impeded the expansion of closely-developed areas in the past, though with tunnels and bridges in use they will be far less effective in the future. The distribution of residence, commerce, and industry has tended to correspond to the topography. Factories have naturally been placed near the waterfront and along rivers which could be navigated or, especially in the past, furnished water power. Residence, as we shall see, is influenced in a different fashion, though, as is the case along portions of the Hudson, East, and Harlem rivers, sites


SCALE in MILES
Newburgh
Greenwood Lake
N.Y.
N.J.
Lake Hopatcong
Boonton
Morristown
Somerville
New Brunswick
Freehold
Peekskill
Katonah
Danbury
Bridgeport
N.Y.
CONN.
HUDSON RIVER
LONG ISLAND SOUND
North port
Glen Cove
Patchogue
Fire Island Beach
OCEAN
ATLANTIC
Long Beach
Rockaway Beach
LOWER BAY
Sandy Hook
Long Branch
Sea Girt
LEGEND
▨ Industrial Areas
▨ Residential Areas
▨ Public Parks and Reservations
REGIONAL PLAN OF NEW YORK AND ITS ENVIRONS ENGINEERING DIVISION
1928

Land Uses in the New York Region

highly desirable for residential purposes have been seized upon by industry.

Of the three forms of close development let us take industry first. There is ample room for any growth easy to foresee. By 1965, it has been estimated, about 200,000 linear feet of wharf in addition to that existing in 1925 will be required. It is possible to provide 623,000. In the same way it is estimated that New York City and the New Jersey counties in the Region will need, by 1965, some 14,400 acres additional for large-scale industrial development. There are, in these areas, more than 63,000 acres of land admirably adapted to the requirements. The task is so to locate the industries of the future as to serve not only their economic needs, but also the social needs of the people who will work in them. The industries exist for the people, not the people for the industries. For this reason the Regional Plan proposes to reserve a large portion of the reclaimed Hackensack Meadows and considerable areas surrounding Jamaica Bay for residential purposes. If rightly planned, these regions will not be the less attractive because they are adjacent to docks and factories.

The industrial spread in the future will be determined as it has been in the past by the natural feature of access to water and by the artificial feature of railroad lines and terminals. These last are not so artificial as they seem, since, though man-made, they usually follow natural lines of drainage. We may expect to see industries spring up along the railroad belt lines, along the course of the Raritan River and New Jersey Ship Canal, on the shores of the Arthur Kill, on Newark Bay, in the southern part of the Hackensack Meadows. If the shallow waters of the westerly part of the Upper Bay, near Bayonne, are filled in, there will be opportunity there for extensive development of heavy industries.

Other areas proposed for industrial uses are on the East River, adjoining The Bronx, and including the stretch of shore between The Bronx and Harlem rivers; on Westchester Creek and on a larger portion of the Newtown Creek district; at Long Island City; at Astoria as far as Flushing Bay; and on the Flushing Meadows, which are already being filled in. It is suggested, however, that the lower portion of the meadows be set aside for recreation. On Jamaica Bay it is probable that only the westerly shore will be needed for industrial uses by 1965. The central portion might be used as a recreational area and the eastern part as an airport.

The best results will probably be obtained if the industrial pattern as we have indicated it is worked out as a whole, although the details in each case will naturally be left to the local authorities. The existing developments could be worked out piecemeal, even though the results were not always of the best, because there were still level sites which could be utilized. But most of the remaining areas which are suitable for heavy industries require more or less extensive reclamation. Municipal authorities are not likely to be willing to meet the expense of this work out of their community budgets, though we have some instances, such as the improvement of the Port of Newark and the laying out of an airplane landing-field by the City of Newark. The reclamation and development projects of the future will be far vaster than these. To carry them out successfully we shall need either the Port of New York Authority, or some similar body, empowered to act for both New York and New Jersey in the common interest of both states. The future of the Port will depend upon the way in which the potential values of the as yet unutilized acres of marsh and shallow water are realized. There will have to be real coöperation and political rivalries will have to be forgotten.

The need of new business centers is not so imperative as that of new industrial centers. The Regional Plan proposes only one such new center, which will be a part of the reclamation and development of the Hackensack Meadows for industrial and residential uses. In most parts of the Region clusters of stores already exist and the requirements of the future will be met by expanding them. Local business follows residence. The amount of space that should be set apart for it can be calculated if we know the probable future population. We can reasonably say, for instance, that there should be, in a suburban community, from 55 to 100 feet of business frontage for each 100 of population. It is hard to predict the future course of business in the Region, because retail stores are in a period of rapid change. Suburban chain stores are making swift progress. Outlying trading centers have grown up which serve large areas. Some village shopping centers that only a few years ago supplied the needs of a small local community have increased their facilities several hundred per cent and now serve a residential district within a radius of several miles.

For this, of course, the automobile deserves the credit. Already projects for erecting large department stores at strategic points within the fifteen-mile radius from the New York City Hall are being discussed in concrete terms. Such stores would draw a large automobile patronage, for which the cheapness of the land, as compared with that occupied by the city department stores, would make it easy for them to provide parking space. Measuring distances by time rather than by miles, a suburban department store at an important corner would be accessible to as large a population as was any department store on Manhattan Island half a century ago.

For residential purposes we need about 75 per cent of our developed land—that is, 75 per cent of that third of the Region which we will lay out for houses, stores, shops, streets, parks, and playgrounds. The proportion is less in districts where there are many apartment houses and greater in sparsely-settled areas, but it is a safe average to follow in planning. The extent of residential sections outside the regional centers is increasing rapidly. With it the problems of transportation have, as we have seen, become intensified, and so have those involving the new suburban communities. The suburban pattern is changing. Until recently the residential hotel, the apartment, the house in a row with other houses like peas in a pod, the semi-detached house, the single family house, and the smaller estates occurred in about the order named as one went out from the center of the city. In recent years, however, the apartment house has been invading the suburbs—witness its presence along the Bronx River Parkway. The personal taste of the renter or owner, his income, and his working habits have much to do with his choice of a location.

Fashion also enters in, very much as it does into the choice of clothing. The social rehabilitation of the East River waterfront is a case in point, although the ground "reclaimed" here was already desirable for residential purposes. In the crowded part of New York City, notably on Manhattan Island, the residential character of certain neighborhoods has been repeatedly altered by changes in the racial complexion of the inhabitants. Often newcomers with low economic and social standards can crowd out the older residents. In the suburbs the lines of cleavage are likely to be economic.

We may map out roughly where a great part of the 10,000,000 New Yorkers who are to be added to our population before 1965 will live. At present nearly 70 per cent of the land area of Staten Island is undeveloped. When highways and railways are completed as indicated in a preceding part of this book, about 25,000 acres of land on the island will be made available for residential and recreational uses. In the Borough of Queens about 56 per cent of the area, not counting the islands in Jamaica Bay, is undeveloped. When we have set aside all that will be needed for industry and recreation, the greater part of more than 38,000 acres will be available for homes. In The Bronx there are still about 10,000 acres of land which can be developed for residences. In Brooklyn there are 9,000, of which residences can claim the lion's share. The northern part of the Hackensack Meadows should provide 15,000 acres, on which may be attractively housed the industrial workers who will find employment in the near-by factories. In Middlesex, Union, and Essex counties large areas will become available when the proposed transportation systems are completed. In Passaic County there is room for close residential development south of Paterson. In Bergen County there is good residential land east of the upper Hackensack, east of Paterson, and around Ridgefield. Near Paterson is the new community of Radburn, a model for this kind of development. In Westchester County most of the fallow land lying south of a line drawn through Dobbs Ferry, White Plains, and Port Chester will probably be dominantly residential. Further north a more open type of residential territory might be developed. The central and southerly portions of Nassau County are, in the same way, well adapted to close development, while the more northerly portion might well be left, at least for a time, in small estates.

The picture we have drawn might be somewhat appalling if we were to take the expression "close development" at its current value. But the reader will understand that close development, as defined in the Regional Plan, means as much living space as the ordinary resident will find necessary—which will be considerably more than many hundreds of thousands of New Yorkers now possess. The pressure of population will be less felt in 1965 than it is today if the program outlined works out as it should. The individual will be leading a better life than does the individual New Yorker today. He may not, indeed, have much solitude. Cities and solitude do not go well together. But he can have comfort and wholesome surroundings.

After providing for the "close development" of residence, business, and industry, we come to the open areas which are also necessary. These include public parks and parkways; water-supply reservations; bridle paths and hiking trails; semi-public open spaces, such as golf courses, cemeteries, and institution grounds; airplane landing-fields; military reservations; and private estates, including land used for farming. These may be called the city's lungs. They preserve that touch with nature which is necessary to normal human life. Even properties upon which the public cannot enter are of value, since they not only beautify the streets and roads which border them, but help to purify the air. We have already glanced at parkways, bridle paths, and hiking trails in the chapter on "Highways and Byways." Logically, of course, they are also a part of the park system. An ideal park layout would make it possible to pass, on foot, on horseback, or by automobile, from one park to another without leaving the parked area. It would not be difficult to plan connecting links which would enable a horseman to ride through parks and along bridle paths paralleling the parkways from Bronx Park to Stamford.

The parked areas of the Region, at this writing, amount, as we have seen, to about 90,000 acres, of which 84,695 are in parks of 100 acres or more and the rest in small parks and playgrounds. With the exception of Central Park and Prospect Park, the larger reservations are commonly removed from the main centers. It is a fortunate circumstance that the land which is best suited for parks is often not well suited for other uses. Ground diversified with rocks and hills is of this nature. But this sometimes leads to the abuse of sites by private owners. Shacks are built, refuse is dumped, and a great deal of injury done. Something of this sort was happening to what is now Central Park at the time of its purchase by the city.

Postponement of purchase for public uses always makes the cost greater. The time to plan for parks is well in advance of close settlement, before private speculation has driven values to an unreasonable level. The best locations for parkways are easier to determine than those for parks proper. Valleys of small streams, such as the Bronx River Valley and the Saw Mill River Valley in Westchester County, are especially suitable. More difficult to construct and maintain, but still more beautiful, are waterfront parkways on high land, such as is found along the Hudson River in upper Manhattan, and the Palisade cliffs in New Jersey. Other land can be readily treated to form attractive parkways of less striking scenic effects. Although a parkway may take a long time to develop into a thing of beauty when it is constructed through a bare and uninteresting stretch of country, it is all the more worth while creating.

For our general standards as to the kind and extent of parks for the Region we need not go beyond what the Westchester County Park Commission has already accomplished or undertaken. Much has been done within the past few years in Union and Essex counties, New Jersey, and in Nassau and Suffolk counties on Long Island. We must distinguish, here as elsewhere, between details which must be elaborated by the communities affected with regard to their varying local needs, and suggestions which may be made for a regional park plan in which all the communities in the Region can co-operate. A regional plan for parks is as important as a regional plan for railways or highways. It will afford a framework upon which local developments can readily be hung. We may divide our proposals into two groups: first, large park projects for the outlying districts; second, proposed parks in New York City. These might again be classified according to whether they are compact areas with a breadth proportionate to their length, or whether they are parked strips, with or without a boulevard or parkway running along them. The strips or "ribbon" parks are of course useful for linking up the system.

Starting with the Sandy Hook section and joining proposed park lands with existing ones, we can surround the central area of the Region with a practically continuous ring of public play spaces. It will be a ring so irregular that no geometrician would have anything to do with it, but that need not worry us. We may begin, for convenience, with the Sandy Hook section and swing around clockwise. The northern shore of the Highlands of Navesink would have been an ideal location for a park, but development has now gone so far as to make this impracticable. We will therefore take the next best, the southerly slope, which is well wooded and overlooks the broad Navesink River. Next we come to the Mount Pleasant Hills, in Monmouth County, between Morganville and Holmdel, where there is opportunity for a large park comparable to the Poundridge Reservation in Westchester

County. It is in the general line of traffic from New York to Asbury Park and Atlantic City, and is reasonably near to present and expected population. Its hilly contours will offer a delightful change from the near-by beaches, and *vice versa.*

The bluffs of the Raritan River at New Brunswick give us another opportunity to make an attractive recreation ground. Continuing toward Metuchen, we find an area over a square mile in extent, partly wooded and with hills and level places. We stick a pin here and turn toward the Watchung Mountains. Here the Eagle Rock Reservation, the South Mountain Reservation, and Watchung Reservation are already in existence. We can wisely enhance their charms by adding a considerable area north of the Watchung Reservation and near Chimney Rock. At Chimney Rock it is proposed to construct a dam for water storage. The shores of the lake thus formed could be used for recreational purposes under suitable restrictions.

Between Plainfield and Rahway we find three-quarters of a square mile of swamp land, not good for much else, which could be made into an attractive park. On Newark Bay, extending a mile inland to the built-up section of Elizabeth, is an area of meadow land well fitted for park use. In the lower part of the Hackensack Meadows we will want to set aside park land to go with the residential and industrial development already described. Here there are two square miles of meadow land which could be used as a bird sanctuary, furnish playgrounds for the workers in the factories, and provide an open prospect for residents on the near-by high ground. The lower valley of Overpack Creek does not seem desirable either for industry or for residence. It would, however, make an admirable site for a marine park. So we stick another pin there. South of Paterson, Garret Mountain offers a splendid park site. Part of this area has been reserved, though it is not open to the public.

Northwest of Paterson the Preakness Mountains present a wild and rugged landscape similar to that of Bear Mountain Park, and well suited for park purposes. Between Mountain View and Two Bridges is another excellent site, including the junction of the Rockaway and Pompton rivers and the easterly tip of Hook Mountain. Here, under proper supervision, might be summer-cottage colonies. East of Lake Hopatcong is more wild country, where public lands might supplement the existing privately owned recreational facilities of the lake. Greenwood Lake, which is only partly taken up by private development, would make another alluring woods-and-water park, especially suitable for week-end visits.

Our trail has now led us northward to Bear Mountain Park. Here it seems logical to extend the park southerly along the Ramapo Mountains, through which there are already many trails. This addition, with an extension to Pompton Lakes, would about double the existing area of the park. It would be an investment for which future generations would certainly thank us. The park might also be enriched by extending an arm to take in High Tor and Little Tor, familiar landmarks just southwest of Haverstraw. At Storm King the boundaries of the Interstate Park could be extended south and west to take in the whole mountain. In Putnam and Dutchess counties, extending from the Hudson River along the county line, is an area of rugged land nearly two miles in width and over five miles in length. It is easily reached by railroad, river, and highway and would make a fascinating playground.

North of Peekskill is an area about four miles wide and five miles long which might readily be regarded as an extension of Bear Mountain Park on the other side of the river. Its hills, valleys, lakes, and streams would tempt the hiker and camper. The watershed northwest of Danbury could be used under restrictions for public recreation. A park area between four and five miles long and over half a mile wide could be laid out along the Mianus River, between Bedford, New York, and Stanwich, Connecticut. Included in it would be the beautiful Mianus Gorge. To complete the chain from the Hudson River to Long Island Sound now formed by the Blue Mountain Reservation, Mohansic Park, and Poundridge Reservation, a new park, about two and a half miles long and two miles wide could be created about two miles northeast of New Canaan.

It is bordered on the south by the Silvermine River, along which it is proposed to build a parkway from Norwalk to Poundridge Reservation. It is largely wooded and well watered.

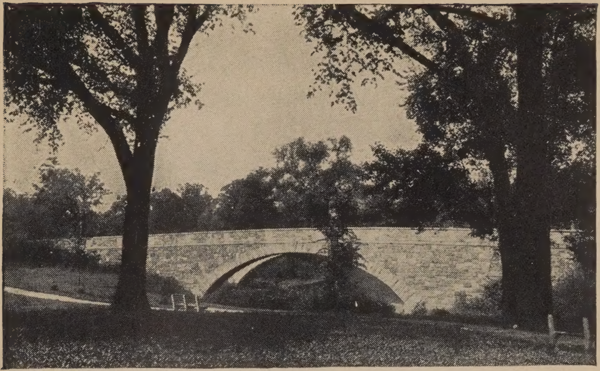
Coming down to Long Island, we find an area of approximately six square miles in the Half Hollow Hills of Suffolk County which would well serve the purpose of a park. Another park site exists in the southern portion of the Manetto Hills, partly in Nassau County and partly in Suffolk. Finally there are the short watercourses along the south shore of Long Island and the islands in the near-by bays. The history of the Bronx River suggests what might be done with the watercourses, some of which have been allowed to become dumping-places and practically open sewers. The islands are marshy and not fit for industrial or residential uses. The quiet, warm waters of the shallow bays make bathing delightful, even when the sea on the outer beaches is rough and cold, and extensive recreational developments here might be well worth while.

We have now girdled the Region with outlying parks. To link some of them up and to take advantage of pleasant routes along rivers, reservoirs, and canals, a number of park strips are suggested. Swimming River, Waackaack Creek, South River, Millstone River, Green Brook, Robinson Branch, Whippany River, Echo Lake, Yantecaw River, Hohokus Creek, Saddle River, Tienekill Creek, Saugatuck River, Five-Mile River, Manhasset Bay, Northport

Bay, and some of the streams on the south shore are among the bodies of water which can be opened up in this way, some to the motorist, some to the pedestrian and man on horseback. Much natural beauty can be made accessible that is now out of the reach of most of us. When there are twice as many people in the Region as there are now, it may be, paradoxically enough, easier to live an out-of-door life than it is today. The New Yorker of 1965 can answer the call of the wild and feel the thrill of great open spaces. That is, he can do so if we plan wisely now.

So much for the open country. What can we still do in New York City itself? Perhaps the most striking possibility in or near Manhattan has to do with the East River islands—Welfare, Ward's and Randall's. These already belong to the city and are part of the Borough of Manhattan. Their total area is about 500 acres—one-fourth of one per cent of the area of the city and nearly two-thirds the area of Central Park. They are the only part of the city completely without connection with metropolitan traffic. Yet the population within reach of them on the shores of the East River amounts to about 1,500,000 who as a group are still without adequate play spaces. At present they are occupied by city institutions which gain nothing, and in fact lose, by being in proximity to the heart of the city. The removal of some or all of these institutions would leave the islands free to serve a much larger number than they possibly can under existing conditions. They would make ideal parks, because of their attractive situation, their comparative isolation, and the ease with which they could be policed. They would be far quieter and more restful than it is possible to make any urban park which is intersected by streets. A number of suggestions have been made with regard to them. Ward's Island, for example, with the exception of a part needed for a sewage reduction plant, might be made into a peaceful retreat, to which the number of people admitted at a given time would be limited. This practice has been successfully followed in at least one foreign park, that on Margaret Island in the Danube at Budapest. Randall's Island might be made into a municipal amusement park. Welfare Island could be devoted to athletic games. This could be done if the penal institutions were removed and the hospitals and other welfare institutions grouped at the north and south ends of the island. The island parks could be reached from Queensboro Bridge, from the Triborough Bridge, and from ferries or river boats adapted to the purpose. Subway openings could also be arranged.

Jamaica Bay affords another opportunity for island parks, though here we are more remote from the centers of population. There are several dozen islands in the bay, some of them submerged at high tide, others high enough above the water to grow marsh grass on their sandy soil. Some filling has



Guy Vroman, Engineer *Carrere & Hastings, Architects*

A BRIDGE IN THE PARKWAY AT GUNHILL ROAD, NEW YORK CITY

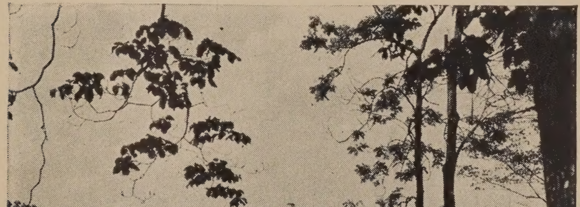


Photo. by P. A. Nyholm

A WESTCHESTER RECREATION CENTER—BATHING PAVILION AND FOOTBRIDGE IN TIBBETTS BROOK PARK

been done here, and more could be done without much difficulty. The nearness of this potential park land to what will probably be a great industrial development within the next few decades is all the more reason for reserving it.

Most of our other proposed park areas within the city front on the water. This is the case at College Point, where a frontage is suggested extending about a mile along the East River between Flushing Bay and Powell Cove; at Whitestone Point, which is also on the east shore of Powell Cove; at the town of Whitestone and at Willet's Point, a little further to the east; at the head of Little Neck Bay; on Flushing Creek Meadows; on the tip of Rockaway Point; at Spring Brook, which lies on the boundary line between Brooklyn and Queens on the shore of Jamaica Bay; at Canarsie, where it is urged that the existing park be extended along Jamaica Bay; at Coney Island Creek; at Great Kills, Fresh Kills, and Prince's Bay, on Staten Island; and at Ward Point, a strip along the shore at the southerly point of Staten Island.

If these areas were all to be developed and opened up as parks we might say that New York had at last begun to take advantage of its great wealth of water frontage. We can hardly say that the city has made the most of its opportunities when our developed frontage remains for the most part commercial and industrial.

A source of possible park space exists in connection with the reservations made for the municipal water systems. These cannot be thrown open for the free use of the public, but they do provide attractive open areas along which it is pleasant to drive or walk. The aqueduct, as every hiker knows, makes an ideal trail. If and when properties of this kind are abandoned for water-supply purposes, as may occasionally happen, they will naturally become parks. In the meantime it would be worth while to study what more extensive use could now be made of them without impairing their primary purpose of supplying water. The purchase of a wider margin of land around the reservoir lakes would make it possible to lay out trails and picnic grounds, and at the same time to add to the value of the watershed.

Next come what we may conveniently call semi-public open spaces. The importance of a golf club, a country club, or an educational or correctional institution, or even of a cemetery, is that it usually includes a large amount of area not built upon. Of these uses the cemetery is the only one which can be considered permanent, and there have even been cases in which cemeteries have been moved to provide more space for the living. Golf courses are often disposed of for building purposes and new ones constructed on less valuable land farther out. But as long as large parcels of land are held in this way they have a present value as "lungs" for the near-by communities and a possible future value as parks. In 1923, when a study of golf and country clubs in the Region was made, there existed 159 clubs with a membership of 51,849, a total acreage of 21,165, and an assessed valuation of $21,255,025. In 1928 there were more than 200 clubs, and no doubt the acreage and valuations had increased proportionately.

Much of the land used for golf is rented. In Westchester County, in 1923, over one-fourth of the total number of clubs rented at least half the land they used, and most of these rented all the land. The difficulty in acquiring such land for park purposes is in the fact that it generally lies in an area of high values, and, indeed, tends to create such values. Sometimes golf courses are laid out with this end in view and yield handsome profits to their members—though perhaps never such large increments as that of a club near Los Angeles which struck oil and made its charter members independently rich.

How enduring cemeteries are may be seen from the continuance of the graveyards around St. Paul's and Trinity churches in lower Manhattan—probably the most expensive land devoted to such purposes in the world. Even where cemeteries impede the circulation of traffic it has been found hard to secure rights of way through them. This has an obvious bearing upon planning. Cemeteries, like parks, should never be of such a size as to constitute a serious obstruction. The difficulties caused by large cemeteries in Brooklyn and Queens are the result of poor planning in the past. Burial grounds usually cause a depreciation in the value of neighboring residential land, or, what amounts to the same thing, prevent a normal increase in values. They can be made more attractive if the erection of vertical monuments is limited or forbidden, and if trees and shrubs are planted in such a way as to give the tract the aspect of a park.

Sometimes old cemeteries can be converted to parklike uses, at least to the extent of being made pleasant spots in which to stroll or sit. The graveyards of Trinity and St. Paul's, long since divorced from any suggestion of living human grief, have actually taken on something of this character. The grounds around institutions are less of a problem. Little sentiment attaches to them, or at least not enough to offset a growing need for the space for other than institutional uses. Usually they are used for building purposes when the pressure of rising values makes it necessary to give them up. It would be a wise thing to acquire at least a part of them for public use before they are, probably forever, alienated.

Chapter Fourteen

NEIGHBORHOODS

WE MAY profitably pause at this point to consider briefly certain changes that are being brought about in the pattern of our city and region by the development of automobile traffic. The modern express highway is like a railway line or even a river in the manner in which it separates areas lying on opposite sides of it. As these highways generally converge as they approach the congested districts, the city is really chopped into islands surrounded by streams of traffic—small islands where the population is closely packed and main traffic ways are close together, larger ones farther out. So the city becomes an archipelago. There is a constant crossing and following of the streams between the islands, and this is accompanied by the delay and danger that we call traffic congestion. Children have to cross heavy traffic to get to school or to the playground, mothers to do their shopping, families to get to the nearest motion-picture theater.

If we could reduce the number of errands which each individual has to do outside his own island we could correspondingly increase the safety and convenience of city life. We can do this if we so plan or rearrange our islands that schools, playgrounds, motion-picture theaters, churches, barber shops, and retail stores will be represented in each one. This is what has been described as "The Neighborhood Unit," or "The Neighborhood Cell." If the last figure of speech makes us shiver a little we may bear in mind that the walls of our cell will be formed by convenience, not by necessity.

If we are to have "units" or "cells," the questions arise how large they shall be and what shall be their pattern. To some extent the factor of size, measured either by area or by population, is one not easily controlled, since our highway patterns have not generally been adopted with much thought for the size or nature of the areas they inclose. But change is constantly taking place and a model will help us to alter, re-plan or build anew more wisely. We may say that our "island" should provide housing for the amount of population ordinarily served by one elementary school. It should be bounded on all sides by arterial streets, and its internal street system should be so arranged as to facilitate local traffic and discourage through traffic. It would be purely a residential area, since most of its workers would go outside its boundaries in order to earn their livings. In this respect it would differ from the country town, and from the sectional unit in which industry as well as residence is represented.

There are four different types of units or cells or islands—the reader may choose which figure of speech he likes best! We begin with a low-cost suburban development. It would contain 160 acres, of which 86.5 acres would be in dwelling-house lots, 3.4 acres in apartment-house lots, 6.5 acres in business blocks, 1.2 acres in market squares, 1.6 acres for schools and churches, 13.8 acres for parks and playgrounds, 3.2 for greens and circles, and 43.8 for streets. The population would be about 6,125 persons, which would give a school enrollment of about 1,021 pupils, all of whom could be cared for in one school building. The streets would be so arranged that none would run clear through the development without interruption. Boundary highways from 120 to 160 feet wide would encourage through traffic to keep out. Within the island there would be comparative quietness and safety.

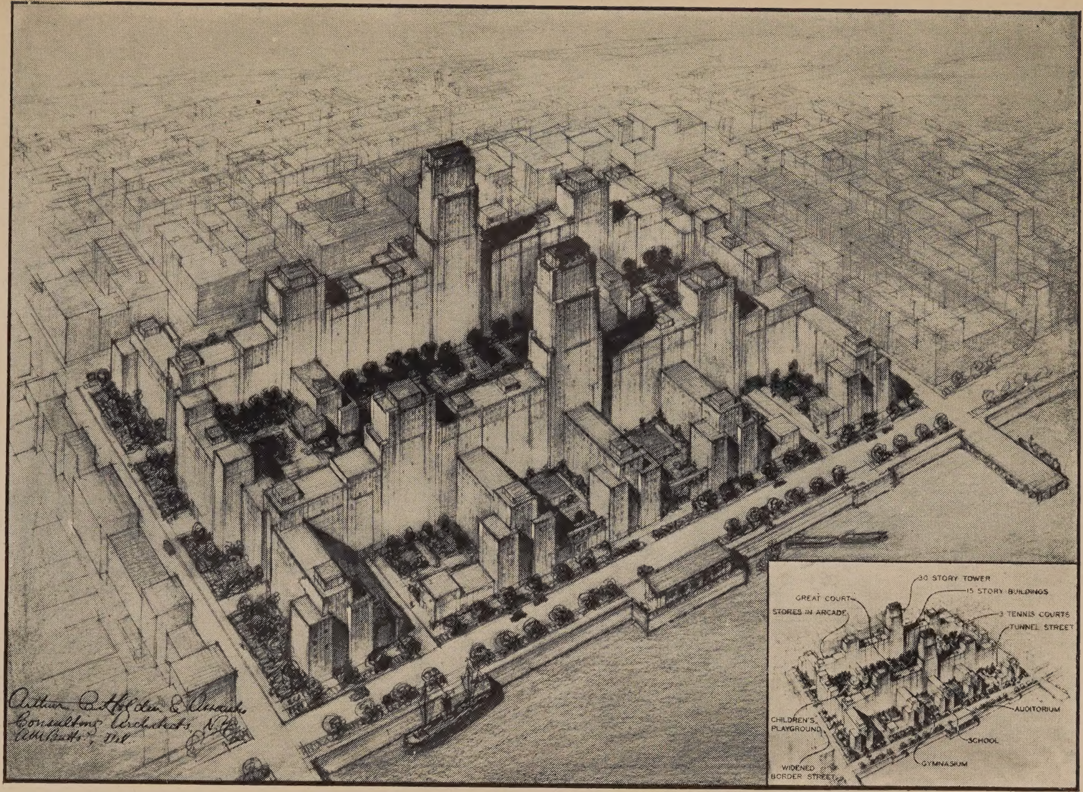
The second type of unit would be located in an industrial section. It would be considerably smaller —101.4 acres instead of 160. Only 37.8 acres would be used for dwellings and 8.4 for apartment houses. Parks and play spaces would receive 10.8 acres—a larger proportion than in the first type. Warehouses and buildings designed for light industry would form a kind of buffer against noises coming from railroad yards, which in this instance are assumed as part of the neighborhood problem. The apartments would be in a row facing inward toward the central open spaces. The population would be a little larger than in the first type—about 8,800 individuals, of whom 1,400 would be school children.

One large modern elementary school would be sufficient.

The third type would be in an apartment-house district, with an area of 75.7 acres. The fractional acre, it should be added, is present because specific tracts of ground have been used in working out the estimates. The apartment buildings themselves would require 12 acres, their yards 21.3 acres, and parks and playgrounds 10.4 acres. So more than 40 per cent of the whole area would be open space. With an estimated population of 10,000 there would be 3.17 acres of open space for each 1,000 persons.

The fourth type is described as a "five-block apartment-house unit." The plot is 650 feet wide and 1,200 feet long, and borders on a river—a condition which could be met on Manhattan Island. Two of the cross streets would be closed and two others carried through as covered roadways under terraced central courts. The main central court would be about the size of Gramercy Park. The buildings would rise from 2 or 3 stories on the boundary streets to 10, 15 and 33 stories—the last being the height of two towers.

Each of the types of neighborhood unit described would have within its boundaries everything necessary for the daily routine of community life, with the exception of employment. Auditoriums, gymnasiums, tennis courts, a community center, places for dancing, and in at least the fourth type a hotel for transients would be provided. The architectural


Arthur C. Holden & Assocs.
Consulting Architects, N.Y.
Wm Batts, Del.
30 STORY TOWER
15 STORY BUILDINGS
GREAT COURT
STORES IN ARCADE
3 TENNIS COURTS
TUNNEL STREET
CHILDREN'S PLAYGROUND
AUDITORIUM
SCHOOL
GYMNASIUM
WIDENED BORDER STREET

A Five-Block Neighborhood Unit

Although intended primarily for outlying areas, the neighborhood-unit idea is also applicable to central deteriorated districts, as illustrated in the architectural study above

treatment could be attractive, neighborhoods could be rescued from deterioration, and a great deal of unnecessary scurrying around could be eliminated. Nor would there be any serious danger that the inhabitants would become Robinson Crusoes, marooned on their respective islands.

It is natural to ask why we make the neighborhood units in each case the size we do. The answer is that the population which will support a public school of the most economical and effective size is also about large enough to justify a separate equipment of the other most important neighborhood services —playgrounds and a local shopping center. The area covered by the unit is roughly limited by the fact that children in an elementary school should not be required to travel more than three-quarters of a mile, and preferably not more than half a mile, to reach their classrooms. In the same way a quarter of a mile seems to be about the effective limit of a playground's reach. Half a mile is also about as far as the ordinary person likes to go to the neighborhood market or drug store. The grocery store or news-stand, to be really convenient, ought to be nearer. Accordingly, an area one-half mile square makes a good neighborhood unit for the suburbs and, as we have seen, the city units are naturally much smaller. The greater the density of population the more compact the unit.

The size of units in congested territory is furthermore reduced by the fact that there must be more main traffic arteries in such territory than in the more open country and that the spaces inclosed between them are consequently narrower. Measured by time, it may take no longer to walk half a mile in a suburban community than to go a half or a third of that distance across city traffic. And it is, as we have seen, a definition of the neighborhood unit that its inhabitants shall not have to cross traffic ways in order to get to their schools, their shops, their churches, and their local recreation spaces. When they have to do so habitually it means not only inconvenience and loss of time, but an actual loss of life which can be measured in any modern city's mortality statistics. In short, the size of our neighborhood units is based, not entirely on what we think they ought to be, but on the manner in which our city grows and spreads. The idea of the unit is not so much to create a new division as to make better use of an existing one.

The "unity" of a neighborhood unit, of course, consists of something more than the buildings—the "plant"—of which it is composed. It needs a flavor of its own. We can all think of cases in which specific districts of a city had a flavor of which the inhabitants were not proud, and of others in which there was a flavor that conferred distinction. The wealth of the inhabitants has a good deal to do with these contrasts, but it does not tell the whole story. Recent experiments in modern housing have shown that workingmen's homes can be made decidedly attractive at reasonable selling prices or rentals. So when we speak of the flavor of a neighborhood unit we mean a quality which will make people glad to live there.

This can be secured most easily in a development which is built up under a unified management, as was the case at Forest Hills. It can be retained by the voluntary action of the inhabitants themselves, acting through neighborhood associations of one kind and another. These seem to work best in communities of from 2,000 to 5,000 people, though their advantages can often be retained as the population increases beyond this point. An apartment-house development might keep its sense of separateness and house a population far beyond this size. But in the thickly settled parts of the city the extent of an apartment-house unit would be limited by the necessity of passing traffic through or around it. A stretch of four or five blocks is about the permissible maximum.

In almost every way the establishment of a neighborhood unit in the suburbs presents different problems from a similar task in the central areas. One great difficulty is that the laws governing the plotting of streets in new subdivisions nearly all require a prescribed minimum width based on the belief that any street may become a main traffic highway. If it were certain in advance that the uses of the land would be so controlled that this could not happen, except where deliberately planned, streets within the unit could be kept narrower and winding and the space thus saved could be used for parks and playgrounds. The unit scheme thus requires recognition by the law before it can be generally applied to new developments. The power to condemn land in certain cases, already granted to a specified class of corporations under the New York housing law of 1926, might well be used in instances where one or two stubborn owners hold up the carrying out of a comprehensive and public-spirited improvement plan. Town planning has long had this valuable aid abroad and it has worked well.

Another matter of public policy in regard to the neighborhood unit is the routing of the main thoroughfares of the city or region. In the densely settled districts this routing is for the most part permanently established. Usually the highways have been cut through with small regard to the size or shape of the chunks left between them, and as a result these chunks have frequently been too small, too large, or awkwardly carved. In laying out new highways, however, the municipal authorities would be wise to consider not only the needs of traffic, but also the kind of life that will be possible in the cells or islands which the highways artificially segregate. A wise city plan, contemplating an extension into new territory, would plot its highways and its neighborhood units together, so that one would serve and harmonize with the other. We could then see an organized design instead of the patchwork quilt to which we are now all too accustomed. Schools, civic centers, and natural shopping districts would be spaced evenly instead of being scattered rather like raisins in a pudding.

Now let us consider the possibilities for neighborhood units in built-over areas where land values are already high and new structures can be put up only after old ones have been torn down. As we have seen, only a few blocks can be covered, and of course the dwellings must be multi-family apartments. The site to be selected may be one in which there has been deterioration in the character of the surroundings. Spots in which this has occurred are to be found in all growing cities. They are as much a symptom of unplanned growth as spots on the body are a symptom of measles. On Manhattan Island they are numerous, particularly along the East Side. In this section many vacancies are now beginning to appear. As the former inhabitants grow more prosperous they move away, and their places, especially in the so-called "old-law tenements," are not being taken by new arrivals. Meanwhile there is a tendency for the wealthier residents of the city to look for new locations for high-class developments in the central areas, so as to avoid the tedium and discomfort of commuting. This has caused the building of new apartments in what had been run-down districts on the East River at Sutton Place, at Beekman Place, and on Prospect Hill, at the end of East Forty-second

Street. Other enterprises of similar nature are going forward on the East Side and in Greenwich Village.

Sometimes the new apartments really form neighborhood units, as on Prospect Hill. At other times they are isolated. They can, however, be very well adapted to the unit idea. The architectural effects which can be secured are alluring, and so, too, are the conveniences which can be offered if a proper balance is kept between the public spaces and the population of the unit. If a unit is to extend over five or six blocks there will be a problem of what to do with the streets which cross it. In this case the owners may reasonably be asked to contribute some of their land toward broadening the boundary streets in return for restricting the uses of the cross streets. It might be possible, in many instances, to continue the central cross street in a covered roadway running through the apartment group, and to turn two others into arcades, possibly with shops fronting upon them, limited to the use of pedestrians. This would take care of a four-block unit. The undertaking would require large capital and would usually have to be coöperative. The coöperative feature, in turn, would enable the residents to select their own neighbors, with the result that the community would have a homogeneity of its own. In fact, it would be a club, made attractive by a library, a gymnasium, a theater or music hall, a restaurant, and an outdoor garden. In its most elaborate form this kind of development would be limited to the uses of people of considerable means. Yet the principle can be applied to almost any economic level of city housing. If it could not, we would not want to spend much time with it, for the problem of city housing must be solved for the average man if it is to be solved at all.

Whether we plan it or not, the lower East Side is certain to be invaded by modern apartments. Land values are already so high in this region that existing buildings could not be profitably replaced at the prevailing rentals. Tenants of these obsolete buildings will move to cheaper land, or, in many cases, as we must hope, rise to a more comfortable economic level. Proper planning and wise construction may enable many clerks and manual laborers whose jobs are in the lower end of Manhattan to live in decency and comfort within easy reach of their work. It cannot be too often emphasized that poor housing sometimes costs as much as good. If a city cannot give the mass of its population sufficient sunlight, fresh air, and open spaces it is to that extent a failure as a city, and the civilization in which it exists is a failure as a civilization.

Chapter Fifteen

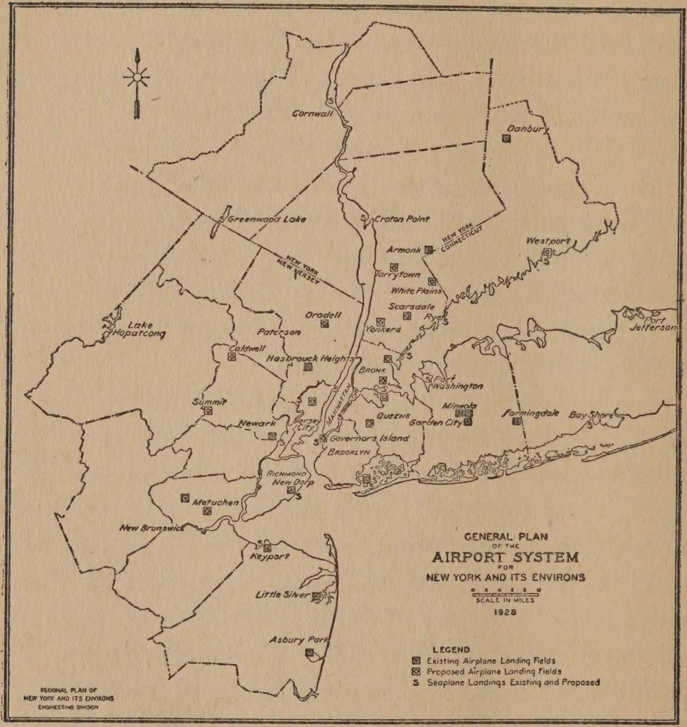
THE EAGLE AND ITS NESTS

HOW much of the future of transportation belongs to the airplane and airship we cannot tell. We are sure, however, that the air will increase in importance as a highway for freight and passenger travel. We are sure, also, that New York will need every possible facility for airports that can be provided. Even the present requirements are inadequately met by existing fields. At the beginning of 1929 the New York Region had 22 registered airports out of a total of 1,330 in the United States. Fourteen of these were commercial, four were military, two were municipal, and two were classified as auxiliary. The Regional Plan proposes the acquisition, as soon as possible, of sixteen more civil airports. Whether these will be enough or not is uncertain, but less than that number will certainly be too few. The necessary steps will have to be taken at once if the land needed is to be secured at a reasonable cost.

The requirements for good airports are already well known. Some of them might be modified if an airplane capable of arising and descending vertically were perfected, but though experiments in this direction have had a degree of success, we cannot depend upon their results. The land should be level and have a good cover of turf. If not naturally hard and well drained, it should be artificially made so. At sea-level, as will be the case nearly everywhere around New York, from 1,000 to 1,500 feet is necessary for runways. At higher altitudes, where the air is thinner, longer runways are necessary. As planes head into the wind when landing, the field should be laid out along the direction of the prevailing wind. Fog and smoke should be avoided as much as possible, though this is not easy in an industrial region lying near the sea. If there are obstructions on adjacent land the runway must be longer in order to enable the plane to clear them.

Equipment is an important factor in the working of an existing airport, but the chief feature in an airport plan for the Region is the selection and acquisition of the land. Equipment can be improvised at any time in the future, but land clearly cannot. A point to be remembered in any discussion of locations is that a variety of fields is desirable on account of the uncertainty of weather conditions, so that if landing is unsafe at one place it can be successfully accomplished at another. Fields acquired in advance of actual needs will not be wasted, for they can be used as recreation grounds for the time being, or as flying schools. If an area is acquired as a landing-field and turns out not to be needed, there will always be an abundance of other uses for it. There is no serious danger that too much land will be kept open.

It will be interesting to look at some of the definite proposals for airports which are included in the Regional Plan. Mountain passes are not as significant in air travel as in travel by land. They are useful to airplanes, however, where they save needless climbing, and they have the added significance


Cornwall
Danbury
Greenwood Lake
Croton Point
NEW YORK
CONNECTICUT
NEW YORK
NEW JERSEY
Armonk
Westport
Tarrytown
White Plains
Scarsdale
Rye
Oradell
Lake Hopatcong
Paterson
Yonkers
Port Jefferson
Caldwell
Hasbrouck Heights
BRONX
Port Washington
Summit
MANHATTAN
Mineola
Newark
Jersey City
QUEENS
Garden City
Farmingdale
Bay Shore
Governors Island
BROOKLYN
RICHMOND
New Dorp
Metuchen
New Brunswick
Keyport
Little Silver
Asbury Park
GENERAL PLAN
OF THE
AIRPORT SYSTEM
FOR
NEW YORK AND ITS ENVIRONS
SCALE IN MILES
1928
LEGEND
Existing Airplane Landing Fields
Proposed Airplane Landing Fields
S Seaplane Landings Existing and Proposed
REGIONAL PLAN OF
NEW YORK AND ITS ENVIRONS
ENGINEERING DIVISION

WHERE AIRPORTS ARE NEEDED

of drawing together railway and highway lines. So we are safe in planning an important airport in the district near Summit and Springfield, where occurs the most favorable opening in the Watchung Mountain Range. Here the airways would meet the belt-line railroad and metropolitan highway loop, with their radiating branches.

Another field was proposed near Caldwell, though it would not be readily accessible from other parts of the Region until the metropolitan railway loop had been completed. When we look about for the most suitable airplane landing near the center of Manhattan, we come back once more to the Hackensack Meadows—the greatest of our untouched land resources. Therefore an area was suggested in the vicinity of Secaucus, near which the New York Air Terminals, Inc., began in 1929 the construction of a huge airport, to include a basin for seaplanes. Another airport, located a mile east of Oradell, would serve that part of Bergen County which is certain to have a large increase in population during the next decade.

Governors Island, though reserved for military uses when so required, might be used in time of peace by both civil and military planes. Here both airplanes and seaplanes could conveniently be provided for. It is the only adaptable site, with the possible exception of the Brooklyn Navy Yard, within reach of lower Manhattan. It meets the urgent need of saving as much time as possible in getting to and from the landing-fields. If time cannot be saved at the terminals, much of the value of the airplane, especially for relatively short hauls, is inevitably lost. Governors Island has the further advantage of not being encumbered with high or expensive buildings, and connection with Manhattan, by ferry or even by tunnel, presents no difficulties. As air transportation is developed there may be a division between passenger and freight traffic, with different types of planes and separate landing-fields. It is at least likely that some planes will be primarily passenger carriers, just as transatlantic liners are primarily for passenger travel, even though they may also carry freight. In that case the site afforded by Governors Island would be logically a passenger terminal, just as is the Grand Central Station or the Pennsylvania. No more magnificent air entrance to New York City could be imagined. The view of the Bay, of the Statue of Liberty, of the Jersey and Long Island shores, and of the monumental lower tip of Manhattan is as magnificent as any urban prospect in the world, and with more building and an ornamental treatment of certain portions of the waterfront it is bound to become more so.

Ports for seaplanes are naturally easier to provide in the neighborhood of Manhattan than those for airplanes. All they require is a sufficient space of water kept clear of other traffic, together with docks and repair facilities such as would be provided for any other small boats. A good deal of coastwise traffic by air could make use of seaplanes and we may expect to see a development of regular routes to the south and to some extent to the north and east. Seaplanes may also prove adaptable for long-distance commuting and for week-end pleasure trips. Already they have been used in a number of cases for these purposes.

A reduction of costs due to standardized production and operation may reasonably be anticipated, and this will increase the popularity of regular or occasional air travel. Moreover, the coming generation may be much more "air-minded" than is the present one. In a few years it may not be an unusual thing for New Yorkers to take planes somewhere along the waterfront and fly to Lake Hopatcong or Greenwood Lake for a week-end outing. Longer trips in which time-saving is a factor will probably be even more common.

Our regional airport map gives us a total of forty-six fields or seaplane landings, of some of which we have already made note. Of these about half will have facilities for seaplanes. They will form a ring extending from Asbury Park on the south to Cornwall on the north, and from Lake Hopatcong on the west to Westport and Port Jefferson on the east. Flying-boats will be able to come down off Riverside Park, in the East River at Twenty-third Street, and at a number of places on the Long Island shore.

What the ultimate effect of the airplane may be upon the nature of cities is a subject which tempts speculation, although there can be no certainty as to what the future holds. Obviously the most important questions raised are whether mechanical improvements will make it possible to land more planes safely within a given area, and whether the airplane can be made cheap enough to compete with the automobile. The first persons to take to the air as a regular means of travel will be the well-to-do, just as were the first who bought and regularly employed automobiles. At one time it was supposed that the automobile would never be more than a "rich man's toy." If we take the most conservative position and assume that this will be the case with the airplane, we can still expect an extension of the commuting area for the owners of large estates who wish to combine country life with doing business in the city. But there is reason to expect some lowering of the prices of airplanes and of air travel as soon as there is a demand sufficient to make it profitable to produce planes in large numbers.

Perhaps some manufacturer will hasten this development, as Henry Ford did with the automobile. The multiplication of airplanes in the neighborhood of cities will then be limited only by the landing facilities which can be furnished. These would be enormously increased in usefulness, as has been suggested, if a plane designed on the helicopter or some similar principle could be made commercially practicable. The space demands of the present types of airplanes are the result of the long run on the ground which they have to make in landing or in taking off. Even so simple an improvement as a reduction in the landing speed would enable many more planes to use a given field. The question is a highly technical one, since the landing speed and the distance which must be covered for a take-off are conditioned by the design and purpose of the plane. Other things being equal, a plane must carry a full load in order to be economically operated, yet a plane loaded to capacity is not easy to get off the ground.

Let us assume, however, that conditions do become such that there are many more planes and many more people who wish to use them than is now the case. The landing-places near the heart of the city will hardly be enough for a population of 20,000,000 individuals with the flying habit. As the close-in fields reach capacity, fields will have to be developed farther out. There will then be a tendency for business and perhaps residential centers to spring up around these fields. As has been observed, we may have new cities created around landing-fields rather than landing-fields created in or around existing cities. The airport will perform somewhat the same function as the railway terminal or the seaport. It is not likely, however, that enough freight or passengers will be carried by air to do away with railways, highways, or steamships. Consequently, the airport of the future, however important in itself, will have to be in organic touch with railway terminals, highway systems, and docks. At its highest probable point of evolution it will correspond roughly to an express stop on a railroad line or a division point where freight trains are reassembled.

Perhaps the ultimate service of air transport will be less in facilitating travel into the city from a suburban area than in shortening the time between metropolitan centers. The cities will thus be linked much more closely together than they were before and it may be that the tendency to give urban life more and more importance will be accelerated. Perhaps, too, the ease with which open country can be crossed by air will do away with that sharp distinction between city life and rural life which has prevailed in every civilization in which cities have existed. In the eastern part of the United States it will hardly be an exaggeration to say that any spot where an airplane can land will be within commuting distance of at least a moderate-sized city. The contacts of the metropolis with the hinterland are sure to be multiplied, and the cream of New York's life will be enjoyed by many more than will actually live within the Region.

It is proper to add that the idea of an extensive development of airports around New York City has been accepted by nearly every agency which has given the subject of planning any attention. In 1925 Mr. Arthur S. Tuttle, chief engineer of the Board of Estimate and Apportionment, suggested four areas—one in the southeasterly portion of The Bronx, one in the Flushing Meadow section of Queens, and two in the Jamaica Bay section, in Queens and Brooklyn, respectively—as suitable for landing-fields. Two years later he recommended the development of an area about a mile square on East Island in Jamaica Bay. It was estimated at that time that the cost of constructing the initial 160 acres of this field would amount to about $1,250,000, to which would have to be added "the cost of airport equipment, including hangars, shops, markers, water supply, gasoline- and oil-storage facilities, drainage, etc." The transatlantic flights of 1927, beginning with that of Colonel Lindbergh, awakened a popular interest in aviation which had not previously existed, but which bids fair to last. Late in 1927 a committee organized by the Department of Commerce studied some seventy-two sites around New York City.

"It is felt," this committee reported, "that a general plan looking toward the development of a system, or series, of airports should be recommended, which may be carried out as the increasing needs of commercial aëronautics and of private flying may require. Such a system will serve not only to meet the airport requirements of the district, but also to provide against the dangers to aircraft and property from forced landings." The report suggested six areas—the Queens-Flushing Bay area; the Newark Bay area; the Bronx-East River area; the Hackensack Meadows; Jamaica Bay; and the Wall Street-Brooklyn area. It pointed out the great desirability of having air terminals as near as possible to the center of the metropolitan district, and also in the line of the natural flow of air traffic. Thus the Queens-Flushing Bay or Bronx-East River area would be suitable for traffic to or from the north and northeast, and the Newark Bay or Hackensack Meadows fields would naturally serve traffic to or from the south and west.

The City of Newark began the development of a municipal airport in 1927. Early in 1928 the New York City Board of Estimate and Apportionment approved the immediate development of a municipal airport on Barren Island. From now on the airport may be said to be past the experimental stage. No one will any longer question its necessity, any more than the necessity of highways will be questioned. Problems will arise, however, as to the policy to be adopted, particularly when there is a choice between spending an available sum on the actual development of a few airports or of using it to acquire a larger area for future development. A far-seeing regional plan will emphasize the latter policy, since, as has been pointed out, it will always be possible to construct airports if the land is available, but impossible to do so if the land is not available. It must be remembered that even a port for seaplanes requires a stretch of shore land for docks, offices, waiting-rooms, and shops. Mr. E. P. Goodrich has estimated that the future air transport requirements of New York City cannot be met by less than thirty-five square miles of landing-fields—more than one-tenth of the area of the incorporated city—within or near the municipal boundaries.

The subject is one upon which it is pleasant to let the imagination dwell. Even though we can anticipate with fair certainty the probable progress of aëronautical invention, we do not really know what effect a vast increase in travel and transportation by air would have upon our civilization. Many of us may live to see the day when airplanes will land upon the roofs of garage buildings in the congested centers of towns, to be stored during the day and taken out when their owners wish to return to their country homes. Such buildings could be many stories high, as urban garages are beginning to be, and the planes could be handled by means of elevators. A great deal of floor space would be required, for twenty airplanes of the average modern type cannot be stored in less than an acre. This would be in part compensated for by the fact that street traffic would be diminished. These airplane buildings might be marvels of architecture, towering far above the skyline of buildings as we know them today, and with their illumination and their penetrating searchlights forming landmarks visible at a great distance. They might indeed become the real gates to the city. There is nothing mechanically or economically impossible in this picture. But it is not one for which we can at present plan, nor do we need to plan for it. If the air garage arrives it can be readily fitted into the existing city.

In the meantime an abundant provision of the older-fashioned kind of airports is imperative. They will be needed so long as the present types of planes are in use. If they are rendered obsolete by the ingenuity of the inventors they can readily be turned into parks. There is no danger that we will be embarrassed by too many open spaces.

Chapter Sixteen

METROPOLITAN FARMS

WE HAVE not yet described all the uses to which open country within the Region could be put. It will be clear, however, from what has already been said, that when all the land needed for residence, business, industry, public buildings, parks, airports, and highways has been taken, there will still remain a large area for which nothing is planned. This area, in fact, will be between two-thirds and three-fourths of the whole. Much of it will be relatively inaccessible, mountainous, marshy, or rocky. Some of it is neither cultivated nor capable of being. But it will include large tracts which are agricultural in their nature—that is, which can profitably be used to produce timber or farm products. The chief obstacle to such profitable use is the practice of pricing and taxing land near cities on its theoretical value for building purposes. This practice has some logic and a good deal of tradition behind it, but in view of the fact that not all of the land will be or can be built upon, there is something wrong with it. In many instances it causes much more land to be laid out in lots than can be sold, with the result that the area is spoiled for agricultural uses without being made of any use for anything else. It also encourages a haphazard and too scattered development which is expensive and wasteful.

Finally, it contributes to the greatest evil of the modern city—its expansion in a mass into the surrounding country on all sides, without being broken up by open areas of land. The ideal outer conformation of a city is not a perfect circle, with the built-up area sharply defined, but a star, or a wheel with radiating spokes. If between these spokes land is permanently left which the city will not occupy, even for parks, we will have a harmony and balance between the rural and the urban. The shape of the pattern is, of course, not all-important. The important thing is to have our two uses of land—the city use and the country use—side by side.

We must not forget that we are talking now, not of public reservations, but of land left over after all the necessary public reservations have been made. The public cannot afford to buy all these areas, even if it were desirable to do so. Neither, in all probability, can it dictate the use their owners shall make of them. It might, however, arrive at something like this result indirectly if it taxed them only on their value as agricultural land, with the understanding that they would be permanently preserved under that classification. This would be difficult under existing American laws, and it is not the object of this chapter to do more than raise the question. In

English cities the same objection does not exist, since the tax system enables an owner to use or rent his land for cultivation after it has become valuable for building. The system is capable of being abused, but it has had the very definite result of encouraging the maintenance of cultivated land between the corridors of suburban development up to the very heart of the cities. When, therefore, Ebenezer Howard suggested the formation of garden cities in England and made it part of his scheme that there should be a belt of agricultural land permanently retained around the city, he was not putting forward anything that seemed revolutionary in English eyes.

Apparently the only way in which we could attain a similar result here would be the reservation of agricultural belts as a permanent condition of the charters of new towns or by public purchase. The latter would only be possible, in most instances, if the land could be cultivated, either as farms or under forest, in such a way as to return a profit on the investment. It might conceivably be rented out for these purposes. In the case of timber-growing the city itself might operate the land, as some German cities do. New York City already owns land on which forests are growing and from which a revenue might be secured. There are a number of places in the Region, such as in the valleys of Fairfield County, Connecticut, where timber could easily be grown for commercial uses without in the least interfering with the scenic beauty of the surroundings—where, indeed, scientific forestry would add to the charm of the sites.

For an instance of the preservation of large areas of open land under private ownership we need look no farther than Long Island. The hilly land on the north shore of Nassau County is peculiarly adapted for large estates forming what are really private parks, and this is the form that the development has taken. These parks are intersected by roads and are within driving distance of populous centers, so that up to a certain point the public enjoys large reservations without having to pay for them. Close development of this area would permit more people to live upon it but would destroy so much of the natural beauty as to be a public misfortune. Given the present economic system and the existence of an abundance of land elsewhere suitable for building, the present use of the land is perhaps as good a one as could be arrived at. The natural motives of the owners, which like those of the majority of mankind are presumably selfish, serve a public purpose. The owners' interests would deserve less consideration if they stood in the way of the city's normal spread and monopolized sites needed for close residence or for recreation. But on Long Island satisfactory locations for these purposes may be found in the central and southern portions, with their low hills and broad beaches.

In time the great estates on the north may give way to small acreage properties, but even that stage is evidently far ahead. A further reason for regarding this situation without grave dissatisfaction is that Nassau and Suffolk counties will probably have to depend upon their own resources for their future water supply, and that these resources are limited. There would not be enough pure water to supply all the population which at a pinch could be comfortably planted on Long Island within commuting distance of Manhattan. If any part of our Region should be zoned for large estates or for agricultural uses, it should be a considerable part of Nassau and Suffolk counties.

The principles which are good on Long Island are good elsewhere, though the conditions which determine their application may vary. We find by a glance at the map that the spoke-like pattern of our ideal city, arising naturally from the routes followed by railroads, transit lines, and major highways, has not yet been lost. Most of the building has taken place along strips or corridors of various widths, with large areas between them either under cultivation or lying waste. These areas naturally tend to expand as one goes out from the center of the city. In the proposed new communities which we will touch on a little later such belts and wedges would be reserved, at least in part, for agricultural uses. The solidity of the city would thus be broken up. A municipality laid out in this way would not present those dreary masses of brick, stone, and cement which are characteristic of the congested portions of the New York

Region now. No resident would have to travel far in order to be reminded of the existence of grass and trees and of the fact that food is produced by tilling the soil.

The psychological gains from this dramatic contrast of city and country would be large. They might even be more than would be the case if the whole open area were laid out in parks. The sight of land *at work* would have a value that the sight of land lying fallow cannot give. How much of the land the city should own, how much it should operate, how much it should rent, how much it should try to control by zoning and taxation, are questions difficult enough of themselves, but not too difficult once the public approves the policy of agricultural reservations.

We have to distinguish carefully, needless to say, between what we can do to relieve conditions in the areas already crowded and the much more ambitious measures we can take in districts still awaiting development. The patterns of Manhattan, of the greater part of Brooklyn and The Bronx, and of the centers of population on the New Jersey shores of the Hudson are relatively fixed. Even where the land in the vicinity has not been completely built upon it has been broken up into small parcels or set aside for building, so that large agricultural reservations are no longer possible. The use of some of this land for market gardening or for raising flowers might still be considered, however. It might even earn more for its owners if put to such employment. But short of a fabulous increase in the city's wealth which would enable it to buy and clear agricultural tracts within the built-up zone, we must go further out before we can test our theory. In Richmond and Queens tracts of arable land can still be found, but probably the burden of providing enough parks and playgrounds for the rapidly growing population of those boroughs will be all that the public authorities can finance. The next best thing may be to encourage acreage plots and small estates, just as we have seen it seemed worth while to do with large estates on the north shore of Long Island. If, by a process of zoning, certain sections could be limited in density to a point that would enable residents who can afford it to have gardens attached to their homes, the city would derive almost as great a benefit as would come from an agricultural reservation.

For instance, a section which comprised houses occupying from half an acre to an acre of land would practically form parks with scattered dwellings. Those who could afford to live in such sections would probably maintain their gardens in such a way that the park-like effect of the development would make it as pleasant as many public open spaces. This is probably the only form in which more spaciousness can be economically obtained within the inner suburbs of the city. It would have the incidental advantage of adding to the city's tax revenue. It would also help to keep within the city wealthy citizens who derive their income from the opportunities it offers and who might reasonably be expected to contribute to its charities and play a part in its civic life.

When we go outside the city and beyond the most highly urbanized parts of New Jersey we find two prominent forms of development which have gone forward rapidly within the past two decades. One of these is the erection of houses for well-to-do people on large lots in attractive country neighborhoods; the other is the subdivision of large tracts into small lots for the erection of small houses, usually done by persons interested in land speculation. Automobiles and improved highways have contributed much in this direction and have given a new and characteristic tone to suburban life.

Persons who can afford to pay for expensive homes are being fairly well served by this system of development, and they in turn have promoted park systems throughout the environs. The other side of the picture is that the great burdens of land speculation have been placed upon the shoulders of those who can least afford to carry them. It is they who drift into places where land is sold at the smallest price and yet is most expensive to the buyer. Its expensiveness is due to lack of access, absence of local improvements, and other defects. The purchase of such land on the installment plan has been carried far beyond the present building needs, with the result that tracts totally unsuitable for residence under present conditions have been rendered unusable for any other purpose. Nassau, Suffolk, and Bergen counties have suffered greatly from this procedure in recent years. Yet the owners of land as a group would probably have profited more if smaller areas had been subdivided and compact growth, with reservations of cultivated soil, encouraged.

We have already seen that the development of large estates, far from being a burden on the community, may actually be an advantage. They even return a considerable money profit to the community in cases where they are taxed at their full market value, yet provide at their own expense many of the services to which the tax money is applied.

This discrepancy is a growing source of irritation in some suburban districts where large estates and a more modest sort of suburban development are included within the same political boundaries. But perhaps the trouble is not that any particular policy is unjust, but that there has been no settled and far-reaching policy upon which any one could rely. Much will always depend upon the local authorities. We cannot expect the same kind of development in Westchester, with its hills and rocks, that we can look for in fertile Long Island. Westchester will never add perceptibly to the food supply of the Region. Long Island might very well produce more food than it does, not only meeting its own needs, but contributing to those of the city.

Perhaps it will do no harm to repeat that our discussion has dealt, not with the question whether there should be open spaces in the Region, but with the more definite problem of where those open spaces should be located and what use should be made of them. This is really what we or our children will have to decide. In one sense none of the suggestions made in this chapter would cost anything to carry out. They have to do with how money should be spent, not whether it should be spent. But far more important than any question of monetary details is the problem of making life more livable. The income of the community, in the last analysis, is the enjoyment which the average citizen gets out of living. Nothing which tends to raise this level can cost too much. Bad planning, or no planning, with the resulting confusion, annoyance and unnecessary fatigue, is the worst extravagance.

Chapter Seventeen

BUILDINGS OF TOMORROW

MORE than two thousand years ago Themistocles said that though he did not know how to play a musical instrument, he did know how to build a glorious city. But the Athens of Themistocles' day presented a far simpler problem than does the great modern metropolis. Themistocles would have had a task comparable with our own had he proposed to plan the entire Athenian empire at the height of its glory. Even then he would have encountered fewer complications, for the machine system and the scientific technology, with its minute geographical and individual divisions of labor, had not come into being. He could envision a completed city, since he did not have to cope, as we do, with the idea of rapid and continuous progress. We cannot plan a modern metropolis as a complete work of art, because, as far as we can see, the city itself can never be finished. The best we can do is to lay out large lines along which changes can most naturally and easily take place. We are even more limited in our architectural conceptions of what the city will be or ought to be than in our ideas of transportation and other social or economic functions. Except in the cases of public buildings and of certain regulations designed to protect the public health, no civic authority can say how our sticks and stones, as Mr. Mumford has called them, are to be laid. But we can, acting on the best advice we can get, set forth some illustrations of what it is possible to do to make New York more beautiful—or, as some would put it, to make its outer forms and masses worthily express the dignity of its functions as a regal city.

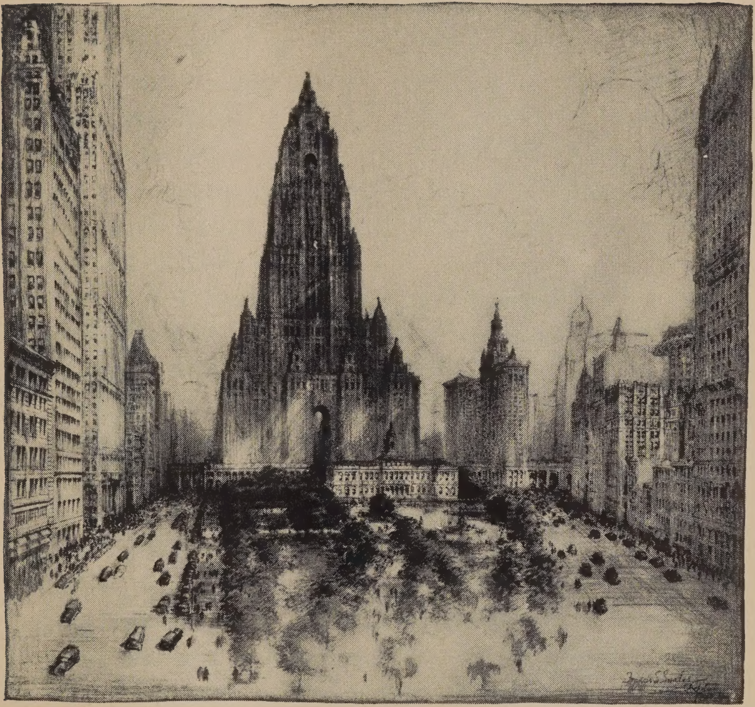
We have to think in terms of relations and masses rather than of individual buildings. Probably no city is a better example than New York of the fact that individually good-looking buildings may exist in a metropolis, yet not create a beautiful effect because of the existence of incongruous elements. It is possible that existing constitutional limits may some time be stretched to make it possible to deal with this situation. But this cannot happen, and ought not to happen, unless an overwhelming weight of popular approval is behind it. It will be persuasion, not coercion, that will bring about the result we hope for. We may analyze the specific building projects put forward in the Regional Plan as tending in this direction under three heads. First, there are proposals for public buildings and the development of large-scale public improvements. Second, there is the planning of sections, blocks and other units by the public authorities. Third, there are suggestions, which cannot go beyond suggestions, for the treatment of buildings to be erected by private owners.

Before mentioning specific projects we may be wise to satisfy ourselves as to certain general principles. No conception of a future city can be complete which does not seek to obtain beauty as a by-product of healthy living and working conditions and of orderly growth. The architect is the agent through which this beauty has to be expressed in buildings. He is the instrument through whom buildings reveal the soul of the city. Individually each building expresses the personality of the artist; collectively they express, or should express, the dominant emotions of the people. That is their supreme value. If we want to speak in the language, or so-called language, of the man in the street, we might say that it pays to make a city more beautiful because beauty is an advertisement which attracts visitors. Washington, Paris, and Edinburgh certainly have more silver to jingle because of the charm of their streets, parks, and buildings.

But things that are ugly and purely commercial may also bring in money. The real value of beauty is degraded when we try to put it into financial terms. It is an element in education, a factor in building up character. In Athens and ancient Rome a great architecture existed side by side with degrading poverty and a low state of public morals, but it is safe to assume that the evils of those days did not rise out of the creative spirit that produced great works of art. Quite the contrary.

No one with eyes to see, least of all no young person, can be in the presence of noble buildings without being affected by them. Buildings well displayed in regard to each other, or, where opportunity offers, against a natural setting, are refining and stimulating influences in any city. Public buildings can be made to symbolize the finer sort of patriotism, or love of literature and art. They can educate the child, voicelessly, in reverence for the great scientists and creative workers of the nation. An environment that satisfies the love for the beautiful which nearly everyone possesses engenders civic spirit. We are proud of our city if it gives us something really precious to us. With love for the city comes the desire to improve it, to devote oneself to its needs, to be more altruistic.

Social ideals and æsthetic ideals are in this humanitarian age closely related. We have outgrown the callousness of the Romans and the Greeks toward the less fortunate of mankind. We know, as they did not, that we cannot have a beautiful city if half the population has to live in slums. It is the inspiration that the more beautiful city gives to improving social conditions that is perhaps its most striking value. No longer is magnificent architecture the mere expression of the vanity of kings and emperors. It speaks, if at all, with the voice of a whole people. It becomes a necessary means of lend-



Regional Plan of New York *Francis S. Swales, Architect*

SUGGESTION FOR A CIVIC CENTER EMBODYING THE SPIRIT OF NEW YORK

With the old Post Office gone, this great structure, towering a thousand feet above City Hall Park, and with ample space about it for light and air, would command one of the most imposing sites in the city (See page 250)

ing dignity to democracy. It is less an extravagance than some of the parts of our city pattern which would instantly be recognized as "practical." It is, indeed, practicality, in the highest sense. It is not ornament or grandiosity, but fitness, truth, order, and simplicity. Even in actual dollars it may cost less than the ugliness and chaos with which large parts of almost every modern city are afflicted. But whatever its monetary cost, it will pay for itself in greater richness of living.

We may illustrate the point by reference to a few of the Region's architectural needs and possibilities. These cannot, of course, be more than suggestive of what can be done. Manhattan and each of the boroughs of the city proper should have fitting civic centers. The industrial units scattered through the Region should have some cohesion and centralization in their development, expressing beauty through order. Industrial buildings need not be ugly. Nothing, for example, is more beautiful than a great grain elevator or even a well-designed factory. Most of the ugliness in the industrial districts is due to pure untidiness, not to bad design. We need a new conception of the pleasure resort. We have seen such a conception approached by the work done by the Westchester Park Commission at Rye Beach. Even Coney Island is losing some of its old tawdriness and beginning to achieve a certain dignity in some of its buildings. There are certain neighborhoods which have a distinctiveness which it is worth while to go to some pains to preserve. Here community centers, in which people may enjoy a number of social features in common, are valuable. We cannot make a type pattern which will fit all such communities. We want to keep all the fruitful individuality we can as an offset to the tendencies toward standardization which are inherent in metropolitan life.

We now come to our specific suggestions, which should be regarded not as hard-and-fast programs, but as indications of what can be done. City Hall Park, Manhattan, is a good place with which to begin. Here it is proposed that the old Post Office and the Court House be removed, and that the buildings on the north side of Chambers Street, including the Hall of Records and the Industrial Bank, be removed to make room for a new building between Broadway and Centre Street. The architect's sketches which have been made for this building show an imposing height of over one thousand feet. It is, needless to say, understood that the structure will comply with the set-back ordinances. On the south it will have the spacious square to look down upon. On the north it will have a plaza giving abundant light and air. In such an edifice New York may express what it stands for, above all other cities, in the way of massive buildings. The civic centers in the other boroughs require further study. In Brooklyn something is needed to prevent further deterioration of the properties immediately adjoining the Borough Hall. In Queens a great new business center may rise in and around Queensborough Plaza and a new civic center in another part of the borough. In The Bronx the civic center may be built in conjunction with the great new transportation center around the lower end of the Grand Concourse.[1] The proposals for Staten Island are still in a nebulous stage, but it is apparent that the topography of the island lends itself to a commanding architectural development.

We have already considered some of the possibilities for railway terminals. Mott Haven, where there is abundant level land and where the transportation links of the entire Region can be tied together, calls for a great two-level station, susceptible of fine architectural treatment. At Sunnyside there is another opportunity. The station over the Sixtieth Street yards of the New York Central has the superb advantage of a river-front site.[2] In Newark the Pennsylvania has already perfected plans for a new terminal, but it is necessary to provide adequate approaches.

The Manhattan waterfront, like those of Queens and The Bronx, has possibilities of magnificent architectural development. On Manhattan the lower West Side front is taken up with big shipping, but the preservation of a dignified marginal way and well built front along the adjacent streets is of great

[1] See illustration facing page 106.
[2] See illustration facing page 284.

importance. The upper West Side and the greater part of the East Side waterfronts call for two-level streets, with a corresponding architectural development. The lower levels will naturally be used for commercial purposes, leaving the upper for pleasure drives and esplanades and making the frontage desirable for residential purposes. A tendency in this direction has already shown itself. Had not a considerable space along the waterfront been devoted to such inappropriate uses as garbage-dumping and slaughtering, this development would have taken place much sooner.

It is evident to anyone who will study the sites that Manhattan may have one of the most splendid residential waterfronts in the world. Great masses of buildings, with mighty arches spanning the cross streets, form the architect's dream of these locations. The drawings tell more than words. It is enough to say that a magnificent opportunity exists. Along the Harlem River Valley—the Seine of New York City—are similar possibilities.[1] Here, again, there should be two street levels, with commercial needs amply met on the lower one and monumental residential and institutional structures above. The time will come, beyond doubt, when the thoroughfares running along the Harlem will become as important as Forty-second Street, or lower Broadway. The buildings fronting on the river will have a chance for display totally lacking in the central portions of Man-

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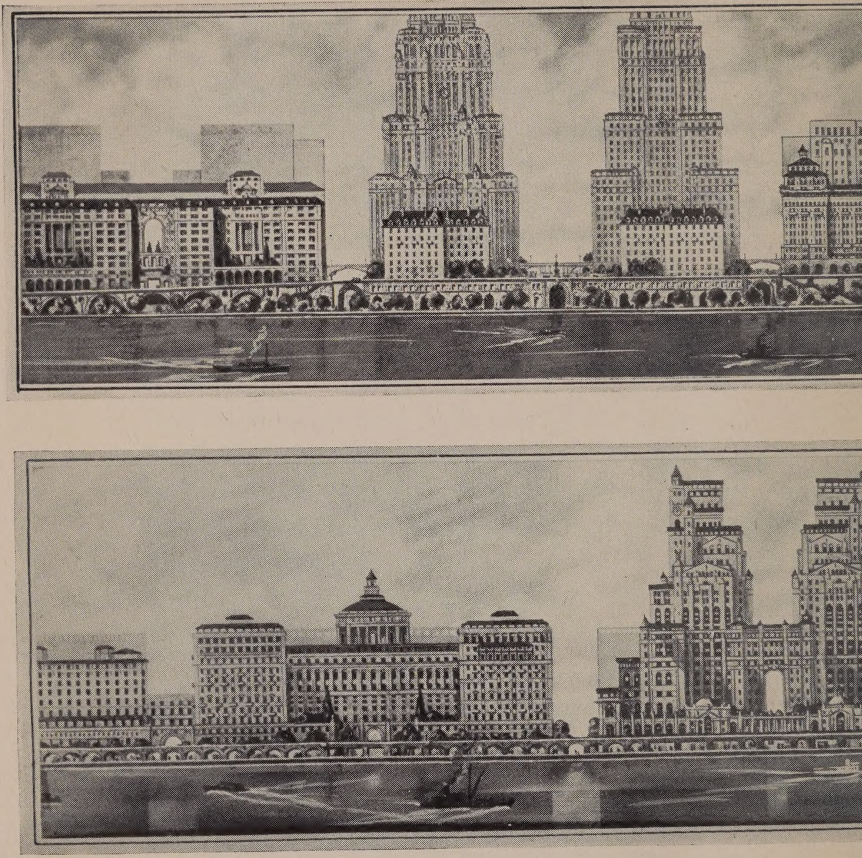
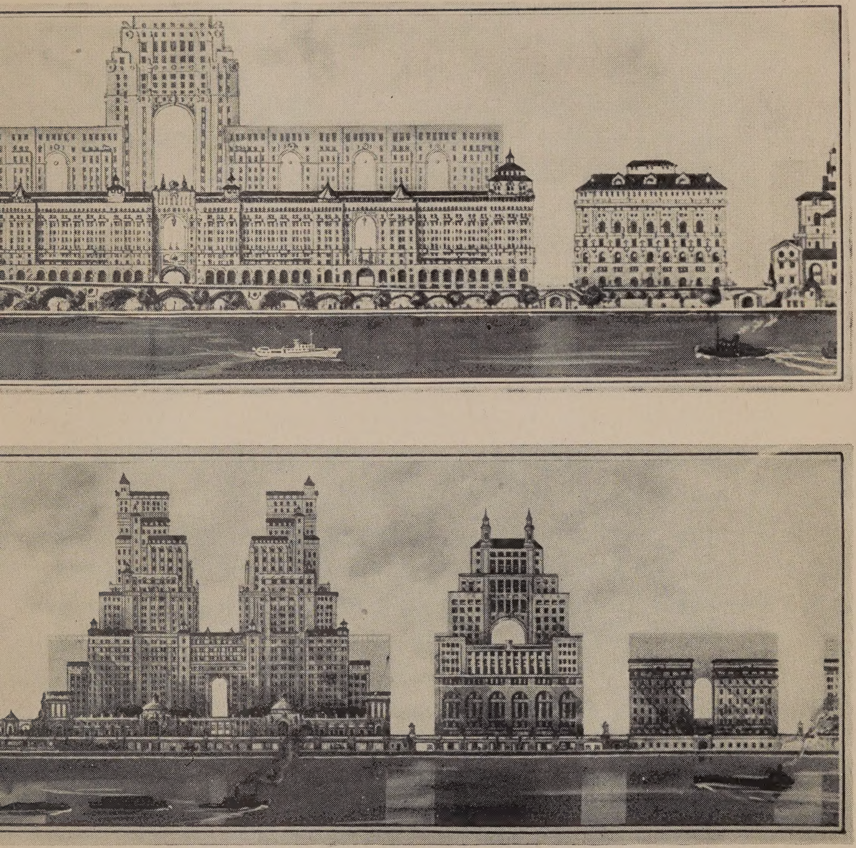
[1] See illustration facing page 106.



Regional Plan of New York

WATER

Much of Manhattan's waterfront calls for two-level development—the lowe
arise. Pictured above are two sections



Francis S. Swales, Architect

SIBILITIES

commerce and the upper for drives along which magnificent dwellings might
East River showing such a development.

hattan, Brooklyn, The Bronx, and in the congested inner sections of the Jersey littoral. Nor will it be necessary to sacrifice utility to beauty. The two will go together.

Two-level streets, with accompanying architectural features, are also proposed away from the riverfronts in portions of Manhattan and to a more limited extent in the other boroughs. The purpose here is not to do what would be best if the city were newly planned, but to improve bad conditions which have grown up. The Regional Plan does not contain proposals for more elevated railroads. It is in sympathy with the proposal that all railways within the city should ultimately be underground. From this point of view the proposed elevation of the New York Central tracks below Thirtieth Street is a mistake although perhaps unavoidable. But there are a few places where elevated streets are absolutely necessary, and where they can be architecturally related to the surrounding buildings. An instance of the kind of elevated street that is in harmony with the Plan is the road surrounding the Grand Central Terminal, with its arched supports along the frontage of Vanderbilt Avenue. Here the street is finely combined with the buildings, as could not be the case if it were carried along the center of a lower-level right of way.

In certain places a moderate development of elevated sidewalks is both necessary and desirable.[1] We may suggest Times Square and both sides of Forty-second Street between Times Square and the Grand Central. Here conditions are such that there is no other solution of the problem of disentangling pedestrian and vehicular traffic. The elevation of such squares as Madison and Union, with space underneath for storing motor cars, is a proposal which has no such arguments to back it. Such projects would ruin the appearance of the squares, with no corresponding benefits. A better solution would be to improve the architectural treatment of the squares as they now exist, and to reduce rather than increase the area given over to traffic.

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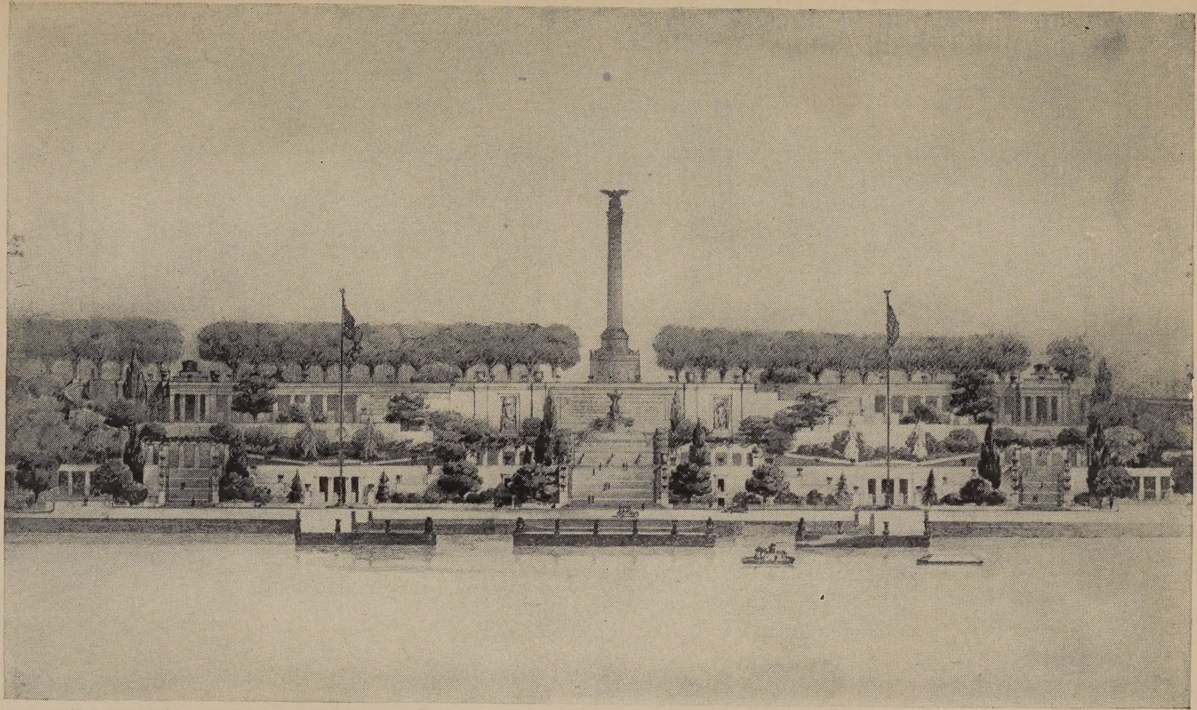
[1] See illustration facing page 72.

The treatment of open spaces, especially along the waterfront, offers alluring opportunities to the architect and to the landscape artist. Mr. Eric Gugler has made a model for Battery Park, viewed as a magnificent seagate to the metropolis.[1] The area of the park is to be extended somewhat by filling in the shallow spots near shore and a plaza is to be created, centering about a lofty monument. The removal of the elevated structures and the elimination of some of the sheds and shacks around the park will make room for buildings more worthy of one of the finest metropolitan sites in the world. The Hudson River front, opposite Columbia University, is admirably adapted to a proposed landing or watergate. If the university grounds were extended to the river, as might be done without great difficulty, a dignified

[1] See frontispiece.



Regional Plan of New York *Francis S. Swales, Architect*

A Worthy Approach to Columbia University Could Be Provided by Extending Its Grounds to the Hudson River and There Developing a Beautiful Watergate

and beautiful approach to its main buildings could be provided. On the New Jersey side of the Hudson one of the finest sites is that owned by the Stevens Institute at Hoboken. Here is New Jersey's greatest opportunity for a monumental structure which will be visible from many miles of the Manhattan shore and command the river and upper bay.

Something has already been said about the treatment of newly reclaimed land, notably the Hackensack Meadows and the islands of Jamaica Bay. Here the architects and landscape gardeners can start with what is practically virgin soil. Similar opportunities exist on the East River islands, whose possibilities as recreation grounds we have already considered. There is space on the shores of the Kill van Kull for a new sort of Coney Island, more beautifully and tastefully designed than the old.

An urgent situation is that occasioned by the building of the Fort Lee Bridge and the probable development of the crests of the Palisades. Here the need is to save a picturesque natural feature from being ruined by the wrong sort of private buildings, and ultimately to provide for a suitable architectural treatment, with the preservation of desirable open spaces. Lastly there are the airports, which we have already discussed. No proposal for a model airport has yet been worked out, but there is a chance here for the creative imaginations of technicians and designers. We can contemplate a time, not many years off, when the great airports will be counted among the main approaches to our city and will deserve to be treated accordingly.

This brief outline will serve its purpose if it induces the reader to give some thought to the architectural future of the Region. The art of the builder is making great strides in America. It is too early to say what lines it will ultimately follow. Perhaps it is enough to be sure that New York, if it seizes its natural opportunities, may find a noble architectural language of its own, worthy of its magnitude and its prestige.

Chapter Eighteen

HOW THE PLAN CAN BE CARRIED OUT

WE HAVE now glanced at the main outlines of what is admittedly the most ambitious program ever laid down for the development of a modern city. It is hardly an exaggeration to say that we have proposed not merely an improvement in the urban region of New York, but a new and in many ways entirely different city. We have by implication faced the problem not of a single community, nor of four hundred communities, but of urban civilization. But obviously it is not enough to set forth an ideal, no matter how carefully it is bolstered up with ascertained facts and no matter how strictly we keep within the technological equipment at our command. We must demonstrate that the ideal is legally, financially, and socially practicable. We are dealing with precedents which must be altered or created, with human beings who must be convinced.

Perhaps we should ask ourselves first whether there is anything in modern experience to show that it is possible for any great city to plan its own future, or whether it must remain subject to the blind forces created by technical changes in ways of living and by a million individual whims and interests. Obviously this book would not have been written if the latter supposition had seemed to be true. Quite as obviously we must depend upon what our common sense tells us can be done rather than on what has actually been done. The best American example we can find is that of the City of Chicago under the Chicago Plan, though that plan, both in its primary conception and in its working out, differs considerably from what we propose for New York. Burnham's original program was architectural. He visualized monumental buildings and imposing avenues and boulevards. He did not strike deeply into those conditions of living and working which actually constitute a city. Furthermore, hardly was his plan made than new inventions, notably the automobile, altered drastically the processes of growth and circulation within and around large metropolitan areas. Had his original street scheme been adhered to, the result would have been intolerable congestion on a vast scale.

Nevertheless, the Chicago Plan, expanding to meet new needs, has borne impressive fruit, and it has grown from a city plan into a true regional program. The improvement of the lake front, the creation of a system of highways outside the city proper, the improvement of railway terminals, the acquisition of outlying parks and parkways, the rearrangement of streets and avenues to enable easier access to the main business district, and the grouping of such civic and intellectual centers as the Field Museum, the Shedd Aquarium, the Stadium, and the Municipal Pier are achievements of no mean order. They show, at least, that with patience and a favorable public opinion much may be done. We may also learn something from what Chicago did not do, such as establishing building lines to make practicable the widening of streets, controlling the subdivision of property, and acquiring park and playground areas in newly-developed neighborhoods. These measures are not spectacular, but they are necessary.

It must, of course, be admitted that planning Chicago's 196 square miles was a relatively simple matter compared with doing the same, not to say much more, for the New York Region's 5,000 or more. The New York Region is not only vastly larger, but has a larger and perhaps more diversified population, and is composed of many more political units. The city itself, in its existing political form, dates back less than a third of a century and still retains traces of its formerly independent municipal and village units. Furthermore, the Chicago Plan was launched by a few enthusiastic men upon the wave of a great popular movement, whereas the New York Regional Plan began as the dream of a small group having no wide public support. But this merely forces us to lay emphasis upon the educational features of the Plan. If it is a good Plan it will command popular interest, and if it commands sufficient popular interest over a long enough period of time it will be carried out.

But in order that there may not seem to be a touch of arrogance in such a statement we must re-define what we mean by the Plan. The proposals which it contains were necessarily made definite and were based on as sound social, economic, and engineering data as could be procured. Otherwise they would not have deserved respect. But the best plan is that which is the most flexible—that is, which may be modified to suit new conditions and new aspirations as they arise without losing its essential unity. It must be a pattern, but a pattern upon which erasures and additions may be made. We may think of it as a framework whose essential features are fixed, as nearly as possible, by natural and inevitable conditions, but which must be filled in to meet changing local and regional needs over a long space of time. The important thing is to have a Plan, and to develop or alter it without destroying the symmetry of its parts. If this Plan could have been produced by an official body, that course might have been preferable. But the fact is that the Region includes so many political and economic interests and jurisdictions that no group of public authorities, existing or likely to be created, could have made a regional program. The task naturally fell to a voluntary and private group which neither had nor desired more influence than arose from the reasonableness of its suggestions.

The Regional Plan as it stands is more than anything else a basis for coöperation, in which governments, corporations, and private citizens may all play a part. We may think of it under six heads, all of which we have discussed earlier in this book: first, transit and transportation, which are in the hands of regulated private corporations, or, as in the case of the City of New York, of governmental bodies acting as corporations; second, harbor and waterway improvements, bridge and tunnel projects, and the like, which come under the jurisdiction of such bodies as the Port Authority; third, county highways, loop roads, parks and parkways and similar proposals which involve the state, county, and local authorities; fourth, highways, parks, zoning regulations, and other proposals in New York City; fifth, such special projects as the development of Jamaica Bay and the Hackensack Meadows, requiring special legislation, agreements between public authorities and owners of land, or the creation of special joint authorities where existing political jurisdictions overlap. Finally, there are the suggestions which the Regional Plan puts forward for the architectural development of the city, whether to be carried out by public authorities or private enterprise.

No general and mandatory Plan could tie and untie all these knots. They must be worked out in detail over a long period of time. If there is harmony among them it must be because those responsible for them have been led to see the urgent need of harmony. For example, we can offer suggestions as to what the railway companies may do, in their own interest as well as in that of the public, to fit their systems to a unified scheme of transportation and of land uses. But no authority exists or seems likely to exist which could compel them to take this step. The Plan must grow up democratically. It must come out of a sense of social responsibility. Without the development of such a sense we shall not in any case be able to rescue our city from barbarism and make it truly civilized.

How far can planning be carried out by public bodies? In New York State a large area may be covered under a legal provision permitting counties to organize joint planning boards. This method has been successfully tried by the counties of Erie and Niagara. In New Jersey the group of counties comprising Hudson, Union, Essex, and Passaic are really one great community and might well act together. Usually, however, cities, towns, and villages may conveniently coöperate within the county boundaries. This has been done by the Westchester County Planning Federation and the Putnam County Planning and Developing Commission. The federation scheme, as used in Westchester, requires no new enabling legislation.

In New York City proper the charter and the general law give wide range for planning. The City Committee on Plan and Survey, appointed by Mayor Walker in 1925, recommended that a planning board be set up. In March, 1929, a bill for this purpose was presented to the State Legislature, and though it was lost in the legislative shuffle, met with no real opposition. Sooner or later a board will have to be created if New York City is to exercise any large degree of control over its own future.

Some of the preventive features of the Plan can be carried out by local zoning and restrictive ordinances with little or no public expenditure. Others, such as the protection of mapped but still undeveloped streets from building encroachments and the purchase of areas in undeveloped localities to be used as open spaces can also be carried out by local authorities at comparatively small expense. In many municipal areas in the Region plans have been or are being made. The trouble with some of these has been that they are piecemeal, dealing with only a fraction of the whole planning problem, such as zoning, street systems, transportation, or parks. Sometimes these piecemeal plans grow into comprehensive schemes. If this process can be assured it has the advantage of building up public opinion as it goes along and of enabling a community to concentrate on one thing at a time. Zoning laws, wisely conceived, can always be carried out independently, so long as it is recognized that a zoning plan is only a preliminary step in planning. The great essential in this case is not to be satisfied with the preliminary step.

One question which frequently comes up is how to plan unincorporated urban communities lying within towns or townships which have large rural areas. These can be planned under existing laws if the local town boards are alive to their responsibilities. Usually it is better to follow this course than to incorporate new small cities, with a resulting increase in political complexity. As these urban areas lying outside the boundaries of the larger and central communities are the Region's growing points, the manner in which they are planned is exceedingly important. If they are wisely managed, the necessity of extending the larger cities' political boundaries may be avoided. From all this it may seem that regional planning is legally a very involved process. It would indeed be so if it had to be projected in detail by some central body responsible for the entire Region. But if we have an entire Region to cover we also have the constructive abilities of four hundred communities to draw upon. No community is set a task beyond its capacities, nor are any laws proposed which are not in harmony with existing legislation.

How much will the Regional Plan cost? How much will any regional plan cost? If the answer could be set down in terms of money it might at first seem appalling. It would seem less so if the cost of planning were compared with the cost of maintaining the Region as a going concern under present haphazard conditions, or with the cost of not planning at all. Increased expense for certain items is one of the prices we have to pay for increasing population, whether we have a plan or not. Taking the country as a whole, freight and passenger traffic within the past thirty years has increased about four times as fast as population. In large cities this tendency is probably even greater. Its cost is very large, and will probably have to be met by increased assessments and adequate—which often means increased—fares.

But there are many elements in a city plan that will cost far less than is generally supposed. Zoning and platting ordinances, measures preventing the abuse of property, and measures protecting the health, safety, and general welfare of the community are enormously important, yet if sustained by the courts may cost no more than the small expense of administration. There are other projects, such as those for constructing or improving streets, purchasing and developing land for recreational purposes, and erecting public buildings, which call for large expenditures. Even here, however, the total may be no more than would have to be spent in the absence of a plan. It may be much less, for planned development of a city prevents expensive mistakes. As Charles D. Norton said, "The money which will carry out the Plan of New York is the money which New York will spend in any event, whether it has a plan or not. With a city plan expenditures can proceed along permanent lines; without it, public expenditures are diverted into projects which are not enduring, and are therefore wasteful." Furthermore, a regional plan or a city plan may seem to cost more, simply because it is a unified plan, whereas the cost of the separate projects which would otherwise fill the gap is never totaled.

In short, it is the absence of a plan, not the existence of one, for which a city or a region should feel apologetic on purely financial grounds. The cost of doing only what is necessary to enable a city to function efficiently, once it has fallen behind in meeting the needs of its inhabitants, would probably stagger us if we could correctly estimate it. The proposals in the Regional Plan will involve very great expense, but they are conservative compared with the multitude of costly schemes that have been suggested by responsible persons as necessary merely to satisfy the supposed needs of the central parts of the Region.

Some of the difficulties from which we now suffer in trying to find money for adequate public improvements are due, not to lack of financial resources, but to the fact that existing resources have had to be heavily taxed to remedy evils which a well-conceived plan would have prevented. If the city had wisely planned for its transit, its streets, and its traffic it would have ample funds to carry out whatever plan was still needed to give additional facilities to its inhabitants.

The sound city or regional plan is first sound economically. It recognizes that a city cannot continue to exist as a civilized entity unless it earns economic and social dividends for its inhabitants. We now face the expenditure of the enormous sum of $3,000,000,000, not to carry out the Regional Plan, but merely to make the city livable for its present population. This sum is the glaring evidence of a past failure. If we neglect to plan we shall have similar penalties to pay in the future. Nor is money the only measurement of cost. The injury to business because of congestion which could have been prevented, the fatigue of travel by existing transit systems, and the actual loss in the joy of living which overcrowding causes cannot be calculated in dollars. Yet they constitute the bankruptcy of urban civilization as we see it in the greatest metropolis of the Western Hemisphere.

The cost of the poor planning of transit facilities is a striking illustration. It has frequently been pointed out that the transit system of New York City has been revolving in a vicious circle of development and congestion. We now have 86 per cent of the population of the city jammed into 97 square miles and the remaining 14 per cent spread out over 200 square miles, or 68 per cent of the area. A far-sighted planning of transit facilities might have made the distribution of population far more even and its transportation far simpler and more convenient. Future transit projects should aim at such a distribution rather than at rendering the existing congestion a little more tolerable.

The problem here is not one of money, but of leadership. Much the same observations may be made with regard to traffic congestion. If we could add up the costs of congestion in terms of overbuilding, wrong uses of land, and poor arrangements of freight and passenger terminals we should have a startling total. Yet all this, or a large portion of it, could have been saved by spending a comparatively small sum on making and administering a plan, on the purchase of land in advance of development for streets and parks, and on widening streets. Even this relatively slight cost would have been partially counterbalanced by the one item of gains to owners of land saved from blighting and depreciation. For, as we have seen, the Region is not as a whole overcrowded. It suffers, rather, from unbalanced growth—too intensive use of the land in some places, too little use in others. What appears to be progress is sometimes merely the decay of an old district and the development of a new one—a process which is always a source of loss.

Facts like this point the moral that New York City, planned or unplanned, and the Region of which it is a part, are not a horse that will stay hitched. We are not proposing to take a fixed and permanent situation, to which the name of New York is given, and transform it into something else, probably better, that will also be fixed and permanent. We are trying not to produce change, but to guide change. The city is plastic. So far as we can see it will remain plastic for a long time to come.

The sum total of the projects which we have described makes the seven labors of Hercules dwindle into insignificance. Yet if we look back thirty years instead of ahead for the same length of time, we find that the city's life has been transformed by changes which only an unusually imaginative person could have foreseen. Thirty years have witnessed the development of the subway system, the completion of the Hudson and Manhattan tubes and the Manhattan and Queensboro bridges, the increase of the Region's motor vehicle registration from a few hundred to a million and a half, a great extension of New York's paved streets, the development of the Westchester Parkway system, the extension of Riverside Drive beyond One Hundred and Thirty-fifth Street, and many other big and little changes of which the aggregate is startling.

It is easy to picture the difference that less than two decades have made when we recall that as late as 1911 it was possible to close Fifth Avenue on a week-day for a Marathon race without serious interference with traffic. Several great enterprises—the Hudson River Vehicular Tunnel, the new bridge connecting Manhattan and New Jersey at One Hundred and Seventy-eighth Street, the bridges built by the Port Authority to connect New Jersey and Staten Island—have been completed or are under way. The great bridge joining the three boroughs of Manhattan, The Bronx and Queens at the East River islands, proposed as part of the Regional Plan, is now being constructed. Air travel has become almost commonplace and landing-fields are recognized by the hardest-headed as being almost as necessary as railway terminals. Steel-frame construction is essentially of the past three decades. For better or for worse it has changed the aspect of New York and every other modern city. The future will have to be marvelous indeed to surpass this record, measured either in bulk and costliness or in its effect upon the lives of the people.

It is an important comment on the Plan that many of its proposals have been carried out in recent public works construction, and that others have been officially entered upon or authorized since the work of the Regional Plan Committee was first undertaken. This is especially the case with the highway projects. If the Plan is followed the city to come will grow naturally out of the city that is. In preparing for tomorrow we shall also be solving today's problems. The policy that needs to be pursued in the interests of posterity is the one that will most help the present generation. But the Plan would not command much enthusiasm if it merely contemplated ways for us to wriggle out of a tight situation. It assumes that we can bring our present standards of health, safety, and convenience to a higher level—that our children will demand more of life than we have done. If legislative changes are necessary to bring this about we must be ready for them. Our Plan must be based on the principles stressed by Edmund Burke in his oration on *Ameri-*

can Taxation: "It is not what a lawyer tells me I *may*, but what humanity, reason, and justice tell me I *ought* to do." If this means a restriction upon the rights of private owners, or of one part of the public, the larger conception of the public welfare must still prevail.

To make a plan that will satisfy everyone is manifestly impossible. To some our program will seem to be too idealistic, to others it will appear to be lacking in true vision. It is, in fact, a middle course between two opposite conceptions—first, that of a practical policy which does not extend beyond the concrete and the present; second, that of an idealistic dream based solely upon the abstract and the future. The one policy lacks soul, and the other flesh and blood, and those who cling religiously to either of them find planning a simple exercise.

The third policy, which we have tried to follow, seeks an ideal based on realities—an ideal shaped by the processes of reason and not by the play of fancy. It involves greater labor than either of the others, but it seems to present the only hope of improving the conditions of life in the City and the Region. It is an ideal based on a study of future trends and possibilities as well as of past events. It has been kept within the limits, not of what it would be good and desirable to do, but of what, as far as can be judged, can actually be done. We have not dreamed little dreams, but neither have we dreamed dreams which can be realized only in some far-off Utopia.

The success of this or any other plan will depend upon whether people can be made to understand it and to want it. It will demand a civic pride capable at once of making a man love his own dooryard and at the same time cherish the natural and artificial beauties of an entire region. Before there can be a visible unity in our transit systems, streets, parkways, recreation areas, and public buildings there must be an invisible but quite as genuine unity in the hearts of the people. We must learn to think regionally. More, we must learn to see our city not as a community separate in its interests from the rest of the country, but as an entity of national and international significance. Just as Grecian civilization rose to its height in Athens, Roman civilization in Rome, Egyptian civilization in Alexandria, French civilization in Paris, so American civilization may culminate in New York.

Civilization today has even more at stake in its cities than was ever the case in the past, for more and more the culture of the world is urban, more and more the world will advance or retrograde according to what its cities are. To rescue, to simplify, to beautify the New York Region, to bring more country into the city and more of the benefits of the city into the country, will be a supreme contribution to human progress.

Chapter Nineteen

THE CITY OF THE FUTURE

IN ONE sense the city of the future will be a manner of living, a device by which our children will get more satisfaction out of life than we do today. Not all the elements which, as we hope, will produce this result can be visualized. Some of them, however, can. We have laid down enough specifications so that we should be able to make a model and look at our coming metropolis in the rough. But first we must note that ours is one of three possible conceptions of what a great city might become. One conception is that it should be highly concentrated and shoot far up into the air. Another is that high buildings are a mistake and that a city should grow only by spreading outward.

We may imagine an airplane view of a city of the first type as showing us a glistening expanse of glass roofs, with large spaces for play, monumental public buildings well set in open areas amid natural surroundings, and other extensive areas which have been bought and cleared at enormous expense for airports.

No smoke pollutes the atmosphere, for electricity provides heat as well as light and power. No railroads are visible, for all are underground. The buildings rise higher than the general level of 1929 or 1930, but the actual height is greater than the apparent height, since there are now double-decked, three-decked, and even four-decked highways, squares, and parks. Buses operate in all directions, but there are no surface cars. Automobiles are stored in garages and in subterranean recesses under the parks. Nature survives, in chastened form, in roof gardens, box trees, window boxes, and in the florists' windows. In the surrounding suburbs we look down on a series of crystal palaces which we are told are factories, with walls of glass and enveloped by beautiful parks. Those who seek wild nature can still find it in great natural reservations lying far outside the city. Perhaps they go to it in airplanes.

If this picture were to be interpreted by some architects, there would be variations of detail. Pedestrians would promenade at their ease on elevated sidewalks, leaving the street level for automobiles. No one would be compelled to go out-of-doors, for each would live, work, and even find recreation in the same building. Thus the nerve-wracking hurry of the city streets as we now know them would have ceased to exist. This possibility has its alluring as well as its alarming aspects. It is a little difficult, however, to imagine its coming out of the city we now have. Double-decked streets are not a new idea. Leonardo da Vinci's marvelous imagination first pictured them, and they have had an attraction for speculative minds ever since. But they would have to be paid for, and this really means that they would have to be profitable to those whose property they affect. Still we do not find individual owners at present building two-decked sidewalks, though they might easily do so. For example, the New York Life Insurance Company has provided an arcade within its new building at the existing street level, and it seems likely that such arcades will be preferred to elevated sidewalks. Doubtless the two-decked sidewalk will be installed in certain localities, if only from sheer desperation. This seems, for instance, to be the ultimate solution for the Times Square district.

For our second kind of imaginary city we may turn to H. G. Wells's *Anticipations,* where there is as good a picture of the horizontally-developed urban region as can be found anywhere. To many people the future city will be a desirable place to live in only as it diffuses itself so widely that all its services can be performed on the surface, and all its houses be provided with gardens and be within easy access to spacious parks. This is a more agreeable picture, perhaps, than the one first mentioned. It fits in better with normal human tastes. But this is not the way in which modern cities, above all, the City of New York, have started to grow. We may realize the ideal in the suburbs, but it is hard to envision it as practicable within a reasonable length of time on Manhattan Island, in a large part of Brooklyn, or in the urban communities on the Jersey shore.

So when we come to consider the city which we and our children can actually make we have to effect a compromise between the horizontal and the vertical systems of growth. The one will continue to pull against the other. The cost of doing things will be the test of whether they will be done. If it is cheaper to extend a street into vacant land in the suburbs than to double-deck it, that is what will be done. Growth upward and outward will take place together, and each will be dictated by economic necessity. The question of access will be paramount. It is folly to build great structures in the center if they cannot be conveniently reached from the outer rings. It is quite as irrational to build suburbs if there are no means of transit enabling their inhabitants to go quickly and easily where their needs or desires take them.

The sensible way of striking a better balance than we have now is to keep a certain amount of residence in the center and take more industry out into the suburbs. Height of buildings, width of streets, and efficiency of transit lines are all factors in our equation. We have to start with what we have and do our best to work our ideal city out of it. Mr. Wells's dream city, or its opposite, may come about in a century or two, but we must reconcile ourselves to the probability that the New York of 1965, despite prodigious changes, will strikingly resemble the New York of 1930.

To see what this means let us imagine a person returning to New York after an absence of forty years. Let us also imagine that he has not kept closely in touch with affairs in his former home city, and knows only that its regional population has increased from about 10,000,000 to about 20,000,000 people. As his ship enters the harbor Coney Island appears much as it used to, except that there are now numerous high buildings. Toward the west, however, he sees a new and more magnificent pleasure resort, flanked by a great yacht harbor, on the waterfront of Staten Island. High buildings have sprung up on the island, but the green of the hills shows that much of its area has been reserved as open space. At the Narrows our traveler sees the terminal towers of the vehicular tunnel that now links Brooklyn with Staten Island, and is part of the highway system that sweeps in great circles, past the ancient water barriers, around the city. In front of Bayonne, on land formerly under water, is a rather imposing group of buildings which turns out to be the great abattoir city where all the slaughtering of the metropolis is now done. Bayonne itself, as the result of coöperation between the railroad companies, steamship companies, and public authorities, has become a great port. Staten Island, owing to the original mistake in planning its piers without adequate land approaches, has fallen behind in this respect.

As the ship approaches Manhattan the visitor notices that Governors Island has changed somewhat in appearance. It is larger than it used to be and airplanes are to be seen coming and going. This island has, in fact, become an important link in the national system of air communication. Tunnels connect it with Manhattan, Brooklyn, and New Jersey, so that it is really a part of the mainland. But the traveler's eye quickly passes over Governors Island and pauses upon the point of Manhattan which used to be Battery Park. Here there have been changes indeed! The background of high buildings remains much the same to the casual glance, but the cluttered little park and waterfront have given place to a beautiful plaza with a magnificent monument in its center—a fitting front gate for the world's greatest city.

But if the returned New Yorker is a little homesick for the good old days, he may be relieved to see that the Staten Island ferry boats still run. They are not of the old design, however. Passengers using them board buses in lower Manhattan and go direct to their homes without having to change. Hardy souls who can stand the mitigated horrors of a 1965 subway can reach Staten Island more quickly, though less agreeably, by taking the underground route *via* Bayonne.

Before inspecting the metropolis at close hand the visitor will perhaps find time for an airplane view of it. He finds a plane available on Governors Island. First he makes a circuit of the outer ring. Brooklyn, seen from the air, shows no revolutionary alterations. If anything there are more open spaces than there used to be. The waterfront has been double-decked for a considerable distance and the Bush Terminal considerably extended. Jamaica Bay has become a port by itself, with a ring of piers, warehouses, and factories, and back of them a large residential area. Much of the land on the islands in the bay has been reclaimed and parked. Coney Island and Rockaway still show the effects of the stupid congestion of forty years ago. It may take forty years more to work a miracle there!

As the plane swings across Long Island, near Garden City, a great airport comes into view. This is a kind of mother port for the eastern side of the Region, with repair shops, hangars, and other facilities in addition to the actual landing-space. Suffolk and even parts of Nassau County, as they are seen from the air, are actually more intensely cultivated than they were in 1930. As the cost of distribution of food has increased and the stupidity of over-speculation in land for building purposes has been revealed, more of the land has been put to its true economic use, and it has become more profitable to grow food near the city. One of the most surprising things is that the Wheatley Hills section of Long Island is still in large estates and farms, some of them smaller than before, but all more or less open country.

Connecticut and Westchester County show little change, except that there is a more even distribution of houses. The traveler imagines that the waters of the Sound near the city have a less muddy color than they used to have. He is told that this may not be entirely imagination. A new and extensive system of sewage treatment has stopped the pollution of the Sound and made the water everywhere safe for bathing. Now the plane is swinging westward again. On the upper East River there is a new harbor which serves the industries that have grown up on upper Long Island and the lower Bronx. The Tri-borough Bridge and the bridge from Whitestone Point to The Bronx show a density of traffic comparable with that of Queensboro Bridge in 1930. The traveler now realizes why it is that congestion has apparently not increased in the center of the city. People can now go around instead of being compelled to go through it.

The Harlem River shows striking changes. Its banks have been developed on two levels. The lower one is for commercial uses, and the upper has magnificent boulevards and plazas faced by beautiful buildings. A new "Grand Central Terminal" has been created at Mott Haven and linked with the Harlem River development in forming a magnificent center of transportation.

The plane takes a turn above Queens, and our Rip

Van Winkle sees that Queensboro Plaza has disappointed whatever expectations may have been entertained that it would become the center of that part of the city. Instead the real center of Queens community life is over toward Middle Village, where airplanes can land within walking distance of the new Borough Hall. By acquiring the land for the airport (at great cost, in 1930) and developing its civic center in the same neighborhood Queens has secured one of the most up-to-date community developments in the Region. At Sunnyside yards another railway terminal has been built by the Pennsylvania and Long Island systems. The new business center adjacent to this station is as busy as the junction of Fifth Avenue and Forty-second Street used to be a generation ago. The plane shoots toward The Bronx again. The eye can clearly trace the great concourse along the line of One Hundred and Seventy-seventh Street, which connects the two new bridges across the upper East River with a magnificent bridge across the Harlem River as well as with the One Hundred and Seventy-eighth Street Bridge—still an imposing landmark after more than thirty years—across the Hudson River.

These developments in the upper part of the city tell a story that can plainly be read, even from a height of many hundred feet. The Bronx is doing business on a scale comparable with that of old-time Manhattan. People living in Westchester need come no farther than The Bronx, in many cases, to do their work or find all necessary facilities for shopping and recreation. From The Bronx, too, they can get to any other part of the Region far more quickly and easily than they could from the heart of Manhattan.

Manhattan, of course, has its new bridges and tunnels. One tunnel crosses at Thirty-eighth Street, running straight through from Queens to Jersey City. Many ambitious schemes for building cross-water connections were dropped years ago when it was discovered that there was a maximum density possible on Manhattan and that facilities which would attempt to increase this density merely invited trouble. Too many tunnels leading to Manhattan would be much like inviting too many tenants into a building. The traveler is somewhat surprised to note that the island is not covered with skyscrapers. They are still in clumps, somewhat larger than in former years, but not evenly spread. Some of the younger real-estate speculators of 1930 are still waiting for the skyscrapers which were to boom the values of their lands. But a number of skyscrapers and large apartment houses can be found in the outer rings of the metropolis. This is a motor age, and people have learned that while they can live in apartment houses and keep motor cars in the suburbs, they cannot conveniently do so in the center.

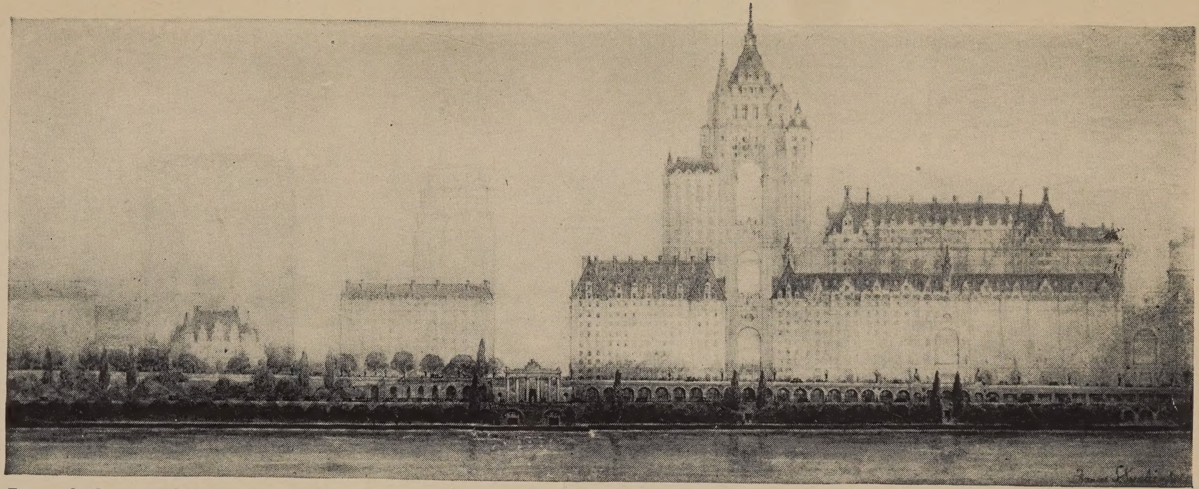
On the New Jersey side of the Hudson a great part of the Hackensack Meadows has been developed, and is now a thriving city as great in extent as the whole Borough of Manhattan. But this new city, which in 1930 was a water-logged area of waste land in the midst of a large number of separate cities and villages, enjoys the advantages of its youth. It has been carefully planned from the beginning, and has avoided the errors which came out of New York's decades of haphazard growth. As the plane circles over New Jersey a number of new features stand out. Literally hundreds of miles of parkways line the river valleys of the Hackensack, the Passaic, and the Raritan. A new waterway has been developed to take the place of the lower portions of the Hackensack which have had to be closed to navigation. There has been an extensive industrial development in the Newark Meadows. A great city has grown up in the region of the Amboys. Here is a fine new harbor, with the spacious surroundings that have been demanded by a population grown tired of congestion.

One thing that is especially noticeable is the existence of a number of outlying communities with girdles of open land around them, on the lines of the parkways. Several garden cities have been built on new areas, relieving the congestion in the center and proving that many of the evils which were taken for granted as inevitable a generation ago can easily be avoided.

As our returned pilgrim continues to inform himself, partly from the air, partly in more pedestrian ways, he will see or learn of a number of instructive developments. Columbia University has extended its buildings to the riverfront and has a magnificent approach in the watergate facing the Hudson River. A splendid new railway terminal has been erected on the site once occupied by the freight yards at Sixtieth Street and the Hudson. All along the waterfront the streets are double-decked. The East Side of Manhattan has been transformed by a boulevard running along the East and Harlem rivers. Here, where a generation ago were slaughter houses, gas houses, and other low-class developments, are stately piles of residential buildings.

Central Park is a little narrower than it used to be, because both Eighth Avenue and Fifth Avenue have been widened at its expense, but much traffic has been shut out of it by making the driveways more circuitous and limiting the speed to fifteen miles an hour. A new extension of the park has been thrust across to the East River between One Hundred and Fifth Street and One Hundred and Tenth Street, connecting with the parks on the East River islands. A strip of park runs all the way from Central Park through Morningside and along the west bank of the Harlem to Van Cortlandt. Fixed bridges of attractive design have been thrown over the Harlem, connecting with the high levels, so that the river is still open for most of the shipping that can make use of it.

Even in 1965 New York has not the open spaces and long, unbroken vistas which are needed for monumental buildings. Most of those structures of



Regional Plan of New York *Francis S. Swales, Architect*

A Terminal over the West Side Yards of the New York Central Would Have the Superb Advantage of a Riverfront Site for a Development Corresponding in Size and Importance to the Grand Central Station

this type which have been erected since 1930 are along the waterfront. New art and educational centers are important exceptions. Appropriate dignity and dominance have been given to the civic center in lower Manhattan. City Hall Park has been improved by the removal of the Post Office and the Court House. A magnificent building towers above the park on its northern side. Centre Street has been widened as a boulevard approach from the north, and a parkway runs from the park to the East River. East Broadway and the Bowery, now that the elevated structures have been torn down, have become streets of the quality that Broadway used to possess. The lower East and West Sides have been rebuilt with modern apartments interspersed with numerous small open spaces. New York in its old age is growing beautiful.

So much for the city of the future, as the returning native might see it—or as we ourselves might see it if we could go to sleep tomorrow in some valley of the Catskills and not wake up until 1965. Let us, for a final paragraph or two, try to see our design as a whole—try to see it not as a machine on the one hand, nor as a useless ornament on the other, but as an approach to the supreme beauty of fitness to its purpose. What, ultimately, is that purpose? We may venture to say that it is to add to the dignity of human life. There can be little dignity and little feeling for beauty in a community which is crowded and cluttered to the limit of human endurance. But just as there has appeared an almost unexpected beauty in skyscrapers whose designers have rejected practically all ornament, so there will be a kind of beauty in a city whose streets are broad enough and lead in the right directions, whose traffic can be comfortably controlled, whose transit systems are convenient and which allows easy access to playgrounds and open country.

If we look at all the lines we have laid down on the great map of the Regional Plan, we find in them the satisfaction of a design which hangs together, and in which none of the important lines wander out of the picture. We cannot show on a map the program for better housing, for more adequate protection of health, for the improvement of the interiors of city blocks, for that greater tranquillity which will come as the causes of unnecessary noise and congestion are removed. We cannot show declines in the deaths from automobile accidents, in crimes of violence or in suicides.

Yet we may cherish the hope that in our future city these tragedies, due in part to the needless nervous strain of present metropolitan life, will diminish in number. There will be more of that calmness and sense of leisure which, rightly or wrongly, we associate with some of the great cities of antiquity. There will be more actual leisure as the hours of labor tend to be shortened and as less time is wasted in traveling between home and job. So we shall have a frame within which beauty may be set and we shall be far more than now in a mood to appreciate beauty.

We have examined, in previous chapters, certain architectural developments, some public, others private, which might serve as models for the coming architectural glory of the New York Region. The more of these that are built the less will we be satisfied with mean houses in mean streets. Throughout Manhattan, throughout the Region, a process of rehabilitation of private buildings and dwellings will go on. Our pride in our city, instead of being confined to a few show streets or monumental buildings, will extend over the whole area. As wealth pours in, as population accumulates, as the country becomes more conscious of its own destiny, the architecture of the greatest city will show the effect, certainly far beyond any limits we have been able to put forward as definite proposals or conjectures in this book. A healthy city, full of the vigor and joy of life, cannot help expressing itself in this way, and the essence of planning is to make a healthy city—healthy, that is to say, in mind and spirit as well as in body.

And this leads to a further elaboration of our dream of the future, which may at first seem too philosophical for a practical world, yet which concerns the intimate daily life of the humblest citizen. An individual is unhappy without a purpose. We all need something to hope for and work toward, whether it be the production of a work of art, the building up of a successful business, or merely the accumulation of sufficient funds to educate our children and provide for our old age. A city is in equal need of an objective.

It is safe to say that the sovereign city of New York has as yet had no objective. It has grown, as we have seen, out of the labors of millions of people, each bent on his own ends. But we cannot plan without planning for something. We cannot make a comfortable and beautiful city—and when we use the word city we are still thinking of the entire Region—unless that comfort and beauty is to have some meaning for us. The meaning of ancient Athens, of Rome, of mediæval Constantinople, of modern Paris and Vienna, has been quite clear. They expressed the best that was in the civilization of which they were a part. There was centered not only the commerce and industry, but also the art and science, of a country, perhaps of an epoch. To some extent, probably, even the slaves in the Athens of Pericles felt that, though they were doing menial work, they were doing it for no mean city. There was a true civic patriotism in Florence and in Venice.

We do not want to recapture the fiercer qualities of this patriotism. Yet our ten millions now and our twenty millions in 1965 will need something to make for unity, and the feeling that we are sharers in a common and glorious enterprise will work toward that result. Our city will still be a place for work. But it will be a place in which work will have a dignity and significance not before attained. We shall at least strive to prove that the spirit which built the Parthenon and the Cathedral of Chartres is not dead in our modern and mechanical and urban world.

Such a dream carries us far ahead into an undiscovered world. Yet unless we admit that human nature has deteriorated since the days of Pericles, we have to believe that it is possible of realization. Otherwise we should be slaves of our machines and not masters—worse off than the serfs who dragged the stones to the crest of the Acropolis. It is not easy to make such a vision specific, to measure it in terms of common life. It calls for a new state of mind more than for alterations in the daily routine. Changes in routine will come largely from mechanical factors which are not easy to predict, and which will affect human life everywhere, not only in New York, but in other cities and in the country districts.

We have already seen the workings of the typical home transformed by inventions which have simplified housework and by other inventions which have taken outside the home altogether many processes formerly performed there. One effect has been, as we have seen, smaller houses and apartments. Another has been that women spend much more time outside the home than they used to. This fact has no direct connection with city planning, but it does mean that women will play a far larger part in making and sustaining our city of the future than they have ever done in any previous metropolis. It means, too, that more of the city's life will be carried on in public than has been the case, and this fact does have a very direct bearing on city planning and on the whole nature of the coming city.

In the first place, the traffic on highways and in transit systems will be greater in proportion to population, since a larger percentage of the people will actually leave home every day. In the second place, there will be an increased demand for all kinds of recreation, both public and private. Private recreation, so far as it violates no laws, must be left to develop as it will. Yet we may expect that the spirit which will build a beautiful city will also refine and improve our theatres, dance-halls, restaurants, and amusement parks. It is not a futile hope that the taste of an entire city may be improved in these matters, and that we may become a more joyous as well as a more orderly community.

In the matter of public recreation we have still a long way to go. We can provide more parks, as the Regional Plan does, but this is not enough—we must also provide better and fuller uses for the parks we have. Our citizenry must accustom itself to habits of neatness. It must learn not to strew newspapers and refuse about its playgrounds, to respect flowers and shrubbery, to enjoy Nature without despoiling her. These may seem small matters, but they are not. They are, almost as much as the crime statistics or the standards of literacy, measures of civilization.

On the positive side we may see an increase in all kinds of public fêtes and ceremonials. In former times people found occasion for these in state or city religions. We do not want and cannot have state religions. But the processions and ceremonials of ancient and even of mediæval times contained a good deal that was only incidentally associated with religion. The goddess Athena embodied the Athenian's pride and joy in his city, and was thus a symbol of something that even a great cosmopolitan community of modern times, with its mingling of races and creeds, might still possess. It may be a little hard to find it in a community whose civic functionaries are obliged on formal occasions to clothe themselves, not in the Greek chiton or the Roman toga, but in frock coats and silk hats. Nevertheless, we may expect our sons and daughters to surmount this difficulty if we bequeath to them a city which is legitimately a cause for rejoicing. And in May-day dancing by children in the park, in band concerts on the Mall, in the musical programs on summer evenings at the Lewisohn Stadium, we have taken steps toward community festivals which have real significance.

In the future we shall perhaps see a multiplication of these sources of enjoyment. We may be a far gayer city, not merely in the sense of commercialized pleasures, but in our spontaneous out-of-doors amusements. We seem, in fact, to be tending in that direction. Three-quarters of a century ago travelers noted the somber and rather dyspeptic appearance of Americans, New Yorkers included. Since then we have undoubtedly learned how to get more fun out of life. In our city of the future we may hope to see this tendency accentuated. The physical framework of the city will be adapted to it just as it will be to our work, our food, and our shelter.

When we look at New York in this fashion we see that despite its more than three centuries of growth it is still in its early youth. The great possibilities of life in the Region have still to be realized. Much that was old and charming has been destroyed by the march of progress, or what passed for progress, but the best is in the ripe years of maturity yet to come. If there is one last word to say about the Regional Plan it is that it is not a mere attempt to escape from existing evils. It is a proposal to take the natural and man-made foundations that we have and upon them to erect the most splendid metropolis—the most magnificent regional community—the world has ever known.

THE END

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